

STATE COMPENDIUM:

PROGRAMS AND REGULATORY ACTIVITIES RELATED TO ANIMAL FEEDING OPERATIONS

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CHAPTER 1. INTRODUCTION

This State Compendium has been developed to support the U.S. Environmental Protection Agency's (EPA) expanding efforts to address the environmental and public health problems associated with animal feeding operations (AFOs) and concentrated animal feeding operations (CAFOs). The Compendium is a compilation of AFO-related state program and state initiative information intended to illustrate how states are regulating AFOs, with a specific focus on the use of permits or similar mechanisms. This document is not intended as an evaluation of the effectiveness of individual state efforts, although some insight into implementation can be gleaned from the information presented.

Most of the state programmatic and regulatory information gathered and presented in this document is directed at controlling water quality impacts from AFOs. Although some states have designed regulatory standards to control non-water quality impacts (e.g., set back requirements for odor control), the vast majority of information presented is based on state efforts to address water quality and nutrient management issues.

The Compendium has been compiled from a number of publicly available information sources, including the following:

- Previously published research and existing surveys of state AFO programs
- State statutes and regulations
- NPDES permits developed for AFOs
- World Wide Web pages of state governments and national agriculture organizations
- Summaries of state program information provided by EPA Regional offices.

It is important to note that in compiling this Compendium no new formal survey of the states was conducted, nor was a comprehensive review of each state's regulations undertaken, as both were beyond the scope of this task. As listed above, numerous high quality sources of publicly available information were reviewed and compiled and, as a result, the Compendium represents a reasonable appraisal of how states are addressing AFO-related environmental problems.

The State AFO Compendium consists of four chapters and two appendices. Chapter 2 of this document provides a national overview of state AFO initiatives based on the publicly available data. It attempts to summarize how states regulate AFOs and highlights key aspects of state AFO programs.

Chapter 3 presents an overview of AFO-related activity at the EPA Regional level. This information on AFO-related state/regional initiatives was provided by the EPA Regions and formatted for this document.

Chapter 4 presents individual state profiles. Each profile includes available information addressing each of the following headings: lead agency, state regulations, state voluntary programs, types of

permits, permit coverage, permit conditions, number of

AFO/CAFO facilities permitted, enforcement, inspection programs, support, case studies/innovative programs, and references.

Finally, one appendix is provided. Appendix A describes methods used to develop the Compendium and highlights the limits of the data collection efforts.

CHAPTER 2. NATIONAL SUMMARY OF STATE INITIATIVES

This chapter presents a national overview of state AFO regulatory programs and initiatives based on a review of publicly available data. The discussion begins with a brief review of the respective federal and state roles in administering the National Pollutant Discharge Elimination System (NPDES) program, followed by a summary of the existing federal regulations addressing AFOs and CAFOs. The majority of this chapter focuses on summarizing (1) State Programs/Initiatives (Section 2.3), (2) Program Implementation (Section 2.4), and (3) Recent State Initiatives/Trends (Section 2.5).

2.1 Overview of EPA/State Roles in NPDES Program

Under the Clean Water Act (CWA), federal NPDES permits may be issued by EPA or any state authorized by EPA to implement the NPDES program. Currently, 43 states are authorized to administer the base NPDES program¹ (the base program includes the federal requirements applicable to AFOs and CAFOs, which are discussed below).² To become an authorized NPDES state, the requirements imposed under a state's NPDES program must generally be as stringent as the requirements imposed under the federal NPDES program. The states, however, may impose requirements that are broader in scope or more stringent than the requirements imposed under the federal NPDES program. In states not authorized to implement the NPDES program, the appropriate EPA Regional office is responsible for implementing the NPDES program.

With regard to the regulation of AFOs, the 43 states authorized to implement the NPDES program have some form of program requirements generally deemed to be as stringent as the federal requirements applicable to AFOs. Yet, as discussed below, it appears that only a handful of states rely solely on their state NPDES regulations to address CAFOs. Rather, most use their NPDES regulations as one part of their CAFO program and supplement these requirements with additional provisions.

Because the federal CAFO regulations constitute the core program requirements in many authorized states and are used for purposes of comparison and summary in this document, these regulations are briefly summarized below.

2.2 Overview of EPA AFO/CAFO Definitions and Effluent Limits, under the Federal NPDES Program

Under the federal NPDES program, EPA has developed regulations that define which facilities constitute AFOs and which constitute CAFOs. Under these regulations, facilities that constitute CAFOs are defined as point sources for purposes of the NPDES program. No facility may discharge pollutants from a point source to waters of the United States without an NPDES permit, except for discharges resulting from a 25-year, 24-hour storm event.

The existing federal regulatory definitions of AFOs and CAFOs are provided at 40 *C.F.R.* § 122.23 and Part 122, Appendix B. These regulations define an AFO as a facility that meets the

¹ State NPDES authorization may be obtained for the base program, as well as for components addressing federal facilities, pretreatment, general permits, and sludge.

² Alaska, Arizona, Idaho, Maine, Massachusetts, New Hampshire, and New Mexico are not currently authorized to implement the NPDES program, including as it applies to AFOs.

following criteria:

- Animals have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period, and
- Crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility.³

Federal regulations define a CAFO generally as an animal feeding operation that:

- Confines more than 1,000 animal units (AUs)⁴, or
- Confines between 301 to 1,000 AUs and discharges pollutants:
 - Into waters of the United States through a man-made ditch, flushing system, or similar man-made device, or
 - Directly into waters of the United States that originate outside of and pass over, across, or through the facility or otherwise come into direct contact with the animals confined in the operation.

The existing CAFO regulatory definition also contains an exemption for facilities that discharge in the event of a 25-year, 24-hour storm event (i.e., such discharges cannot make an AFO a CAFO).

In addition, under existing federal regulations, the permitting authority (e.g., EPA or an authorized state) can designate an AFO as a CAFO upon determining that the operation is a significant contributor of pollution to waters of the United States. This determination, which takes a number of factors into account (e.g., slope, vegetation, and the proximity of the operation to surface waters), is based on an onsite inspection by the agency that issues the permits.

Finally, in addition to the provisions that define AFOs and CAFOs, EPA has promulgated an effluent limitation guideline (ELG) applicable to feedlots greater than 1000 AUs (feedlots are defined in the same manner as CAFOs) (see 40 *C.F.R.* § 412). This regulation generally establishes that CAFOs are subject to a zero discharge standard except for discharges resulting from a 25-year, 24-hour storm.

³ 40 *CFR* 122.23 (b)(1).

⁴ The following examples are animal quantities equivalent to 1,000 animal units: 1,000 slaughter and feeder cattle, 700 mature dairy cattle, 2,500 swine each weighing more than 25 kilograms, 30,000 laying hens or broilers (if a facility uses a liquid manure system), and 100,000 laying hens or broilers (if a facility uses continuous overflow watering). See 40 *CFR* Part 122, Appendix B.

2.3 State Programs/Initiatives

The national summary of state programs and initiatives is divided into four categories: (1) regulatory programs used by states, (2) state definitions of CAFO/AFO, (3) use of general versus individual permits, and (4) key permit conditions.

2.3.1 Regulatory Approach

Figure 1 provides a state-by-state depiction of the AFO permitting mechanisms available in each state. States have five categories of permitting mechanisms:

- Federally Administered NPDES Program
- Federally Administered NPDES Program and State Administered Non-NPDES Program
- State Administered NPDES Program
- State Administered NPDES Program and State Administered Non- NPDES Program
- State Administered Non-NPDES Program

As discussed above, 43 states are authorized to implement the base NPDES program. As a result of this authorization, most states have some regulatory requirements that address CAFOs within their state NPDES program or that are referenced by that program. As illustrated in Figure 1 and summarized in Table 1, of the 43 states authorized to implement the NPDES program:

- Thirty-two states administer a state NPDES CAFO program in combination with some other state permit, license, or authorization program. Typically, this additional state authorization is a construction or operating permit.
- Eight states regulate CAFOs exclusively under their state NPDES authority.
- Three states have chosen to solely regulate CAFOs under state non-NPDES programs.

Of the seven states not authorized to administer the NPDES program:

- Four rely solely on federal NPDES permits to address CAFOs.
- Three impose some form of a state non-NPDES program requirement, although EPA remains responsible for administering the NPDES CAFO requirements in these states.

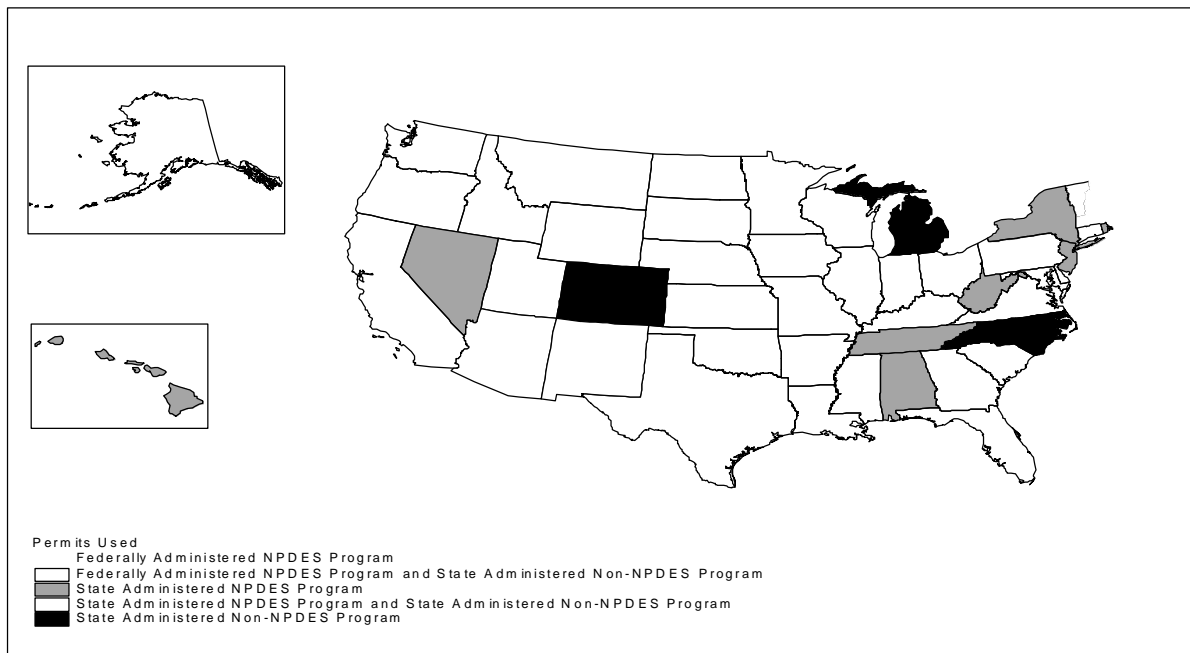


Figure 1. Regulatory Mechanisms for AFO Permitting in Each State

Overall, 35 states have a combination of permitting mechanisms available for addressing environmental impacts from AFOs. Twelve states exclusively regulate CAFOs under a state or federal NPDES program. Three states (Colorado, Michigan, and North Carolina) only regulate AFOs under a state non-NPDES program, with Colorado and Michigan not requiring any AFOs to obtain any form of operating permit.

2.3.2 State Definitions of CAFO

EPA and state definitions of a CAFO are important because the definitions determine the scope of the existing federal and state regulatory programs. As discussed above, EPA's definition of a CAFO is based on the length of time animals are confined, the number of animals (animal units) confined, and whether or not the facility directly discharges pollutants into waters of the United States. Virtually all states use the federal definition for state NPDES CAFO programs. The vast majority of states also use the federal definition of CAFO for state non-NPDES CAFO programs. Several states, however, use a lower numeric threshold (i.e., number of animal units) for non-NPDES permitting. For example, Minnesota issues individual NPDES permits to confined feeding operations as defined by federal regulation and state feedlot permits (non-NPDES) to facilities with more than 10 animal units (calculated by using the formula used in the federal definition).

States that use the federal definition of CAFO may also increase the scope of coverage required through state NPDES programs by similarly reducing the number of animals (i.e., number of animal units) a facility can confine before being subject to permitting. For instance, Alabama's new general state NPDES permit will cover all operations with at least 250 animal units.

Table 1. Identification of Permit Type and Permit Requirements Within State AFO Programs in the United States¹

State	State NPDES	State Control Mechanism ² (non-NPDES)		General/ Individual Permits				Permit Conditions ³			
		Construction	Operating	NPDES		State non-NPDES		Effluent ⁴	Managemen	Land Application	
				General	Individual	General	Individual			Agronomic Rates	Offsit
AL	✓				✓			✓	✓	✓	✓
AK	ND ⁵										
AR	✓	✓	✓	✓			✓	✓	✓	✓	✓
AZ	ND		✓	✓		✓				✓	
CA	✓	✓	✓	✓				✓		✓	
CO	*							✓	✓	✓	
CT	✓	✓	✓				✓		✓	✓	
DE	✓		✓								
FL	✓	✓	✓		✓			✓		✓	
GA	✓		✓	✓	✓		✓	✓		✓	✓
HI	✓				✓						
IA	✓	✓	✓		✓		✓	✓	✓	✓	✓
ID	ND		✓	✓			✓	✓	✓	✓	✓
IL	✓	✓	✓	✓	✓		✓	✓	✓	✓	
IN	✓	✓	✓		✓				✓	✓	
KY	✓	✓	✓		✓		✓	✓	✓	✓	✓
KS	✓	✓	✓		✓		✓		✓	✓	✓
LA	✓		✓	✓			✓	✓	✓	✓	✓

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State	State NPDES	State Control Mechanism ² (non-NPDES)		General/ Individual Permits				Permit Conditions ³			
		Construction	Operating	NPDES		State non-NPDES		Effluent ⁴	Managemen	Land Application	
				General	Individual	General	Individual			Agronomic Rates	Offsit
MA	ND										
MD	✓	✓		✓	✓		✓				
ME	ND				✓						✓
MI	*							✓			✓
MN	✓		✓		✓		✓	✓	✓	✓	
MO	✓	✓	✓	✓	✓		✓	✓	✓	✓	
MS	✓		✓	✓	✓		✓	✓			
MT	✓	✓	✓	✓	✓	✓	✓	✓		✓	
NE	✓	✓	✓		✓		✓	✓	✓	✓	
NC	*	✓	✓			✓	✓	✓	✓	✓	
ND	✓	✓	✓		✓					✓	
NH	ND										
NJ	✓									✓	
NM	ND	✓	✓	✓			✓		✓	✓	
NV	✓				✓						
NY	✓			✓					✓		
OH	✓	✓	✓	✓					✓	✓	
OK	✓		✓	✓	✓			✓	✓	✓	

Table 1. Identification of Permit Type and Permit Requirements Within State AFO Programs in the United States¹

State	State NPDES	State Control Mechanism ² (non-NPDES)		General/ Individual Permits				Permit Conditions ³			
		Construction	Operating	NPDES		State non-NPDES		Effluent ⁴	Managemen	Land Application	
				General	Individual	General	Individual			Agronomic Rates	Offsit
OR	✓	✓	✓	✓	✓	✓	✓			✓	
PA	✓		✓	✓	✓				✓	✓	
RI	✓										
SC	✓	✓	✓	✓	✓	✓	✓	✓	✓		
SD	✓	✓	✓			✓	✓	✓			
TN	✓				✓			✓			
TX	✓		✓	✓		✓		✓	✓	✓	
UT	✓	✓		✓	✓	✓			✓		
VA	✓		✓			✓	✓	✓	✓	✓	
VT	✓	✓						✓		✓	
WA	✓		✓	✓	✓	✓	✓	✓	✓	✓	
WI	✓	✓	✓	✓	✓			✓		✓	
WV	✓							✓	✓		
WY	✓	✓			✓			✓	✓	✓	
Totals	40	23	32	22	26	10	22	28	27	32	10

Table 1. Identification of Permit Type and Permit Requirements Within State AFO Programs in the United States¹

State	State NPDES	State Control Mechanism ² (non-NPDES)		General/ Individual Permits				Permit Conditions ³			
		Construction	Operating	NPDES		State non-NPDES		Effluent ⁴	Managemen	Land Application	
				General	Individual	General	Individual			Agronomic Rates	Offsit

¹ Blank data cells indicate that the program element was not a component of the state program or information was not sufficient to make a determination.

² State control mechanisms include all forms of formal state approval required to construct or operate an AFO, such as state issued non-NPDES permits, letters of approval, and certificates of coverage.

³ Permit conditions are requirements imposed through either NPDES or state non-NPDES programs.

⁴ Effluent limits refer to whether or not a state imposes federal effluent limits to AFOs/CAFOs (i.e., no discharge allowed except during 25 year, 24- hour storms). A check could indicate that a state imposes effluent limits that are more strict than the federal requirements (e.g., Arkansas does not allow any discharges regardless of storm events).

⁵ ND = States not authorized to administer the NPDES program.

* Although authorized to administer the NPDES program, the state chooses to use a separate program to address AFOs.

As indicated in Table 2, five states have developed unique definitions of CAFOs that do not follow the federal definition. States that do not use the EPA definition of a CAFO typically base their definition on number of animals confined, weight of animals and design capacity of waste control system, or gross income of agricultural operation. These definitions are exclusively applied to state non-NPDES programs.

Table 2. State CAFO Definitions Differing from the EPA Definition and Use of the Definition in Regulatory Control.

State	Classification Scheme	Facilities Subject to State Non-NPDES Regulatory
Indiana	Number of Animals	Operation with 600 swine, 300 cattle, or 30,000 birds
Iowa	Weight of Animals in a Confinement Feeding Operation	Permitting threshold based on type of waste control system and design capacity (based on weight) of that system (e.g., an anaerobic lagoon with a design capacity of 400,000 lbs of bovine requires construction permits)
Kansas	Number of Animals	Operations with 300 head regardless of animal type
Maryland	Gross Income and Animal Units	All agricultural operations with incomes of at least \$2,500 or eight animal units
North Carolina	Number of Animals	Operations designed for 100 head of cattle, 75 horses, 250 swine, 1,000 sheep, or 30,000 birds

One important difference between state CAFO programs and the federal program is that many states (at least 15) have addressed the issue of authority to issue permits to CAFOs by requiring that all or a specified subgroup of CAFOs - regardless of whether they have a direct point source discharge of pollutants to U.S. waters - obtain an NPDES permit.⁵ However, this requirement is imposed under state, not federal, law and could not be imposed at the federal level. For example, the State of Arkansas requires that all CAFOs that use a liquid waste management system must obtain permit coverage under either the state-issued general permit or an individual permit. CAFOs with dry waste management systems are not automatically required to obtain a permit; however, all facilities with more than 1,000 animal units are subject to coverage under the State's general permit. Similarly, Iowa requires that all open feedlots above a specified capacity (e.g., 1,000 beef cattle, 700 dairy cattle) obtain an operating permit.⁶ This is an important distinction because states have opted to expand the scope of facilities that fall within the definition of a CAFO by eliminating the requirement that a facility must have a discharge before being considered a CAFO. In other words, states are requiring large facilities with a potential to discharge to abide by CAFO rules.

⁵ Preliminary state data indicate that the following states require all CAFOs to obtain permits: AL, AR, IO, KS, KY, LA, MN, MS, NC, NY, OH, OR, SC, WA, WY.

⁶ Open feedlots of specified capacities that discharge wastes into State waters and open feedlots identified on a site-specific basis are also required to obtain permits.

2.3.3 General/Individual Permits

The regulation of CAFOs is challenging, in part, because of the large number of facilities across the country. It is estimated that 450,000 operations nationwide confine or concentrate animals, of which a very conservative estimate indicates that at least 6,600 have more than 1,000 animal units and are considered CAFOs under the federal definition⁷. One way of reducing the administrative burden associated with permitting such large numbers of facilities is through general permits. Existing regulations provide that general permits may be issued to cover a category of discharges within a geographic region. Within such areas, general permits may regulate either storm water point sources or a category of point sources that involves similar operations with similar wastes. Operations subject to the same effluent limitations and operating conditions, and requiring similar monitoring, are most appropriately regulated under a general permit. EPA and the states are using general permits to regulate CAFOs, and this trend appears to be increasing. South Dakota, for example, has established two general permits for CAFOs, one to address swine operations and another for all other livestock.

Of the 43 states authorized to implement the NPDES program:

- Nineteen have issued a state NPDES general permit for CAFOs
- Ten have issued a state non-NPDES general permit for CAFOs.

Of the seven states not authorized to administer the NPDES program, four are subject to a federal general permit.⁸

2.3.4 Permit Conditions

Normally, an NPDES permit will include several types of permit conditions, including technology-based effluent limits (i.e., zero discharge except for a 25-year, 24-hour storm for CAFOs subject to § 412), water quality-based effluent limits (if the technology-based limit will not ensure compliance with state water quality standards), monitoring and reporting conditions, special conditions (e.g., conditions that impose additional controls beyond numeric limits, such as best management practices [BMPs]), and standard conditions (e.g., duty to comply, duty to ensure proper operation, and duty to provide information).

As discussed above, the federal technology-based effluent limit for CAFOs is no discharge except in the event of a 25-year, 24 hour storm. States not authorized to implement the NPDES program must use this federal effluent limit.

Authorized states generally are equally as stringent, but may be more stringent. Based on a review of the available data, of the 43 states authorized to implement the NPDES program:

⁷ *Animal Agriculture: Information on Waste Management and Water Quality Issues*, General Accounting Office, 1995.

⁸ CAFOs in New Mexico are subject to an EPA Region 6 general permit; facilities in Idaho and Alaska are subject to an EPA Region 10 permit, although no facilities are covered under an NPDES permit in Alaska; Maine, New Hampshire, and Massachusetts are located in EPA Region 1, which does not have a general NPDES permit for CAFOs; CAFOs in Arizona are subject to an EPA Region 9 general permit, although no facilities are covered under the general permit.

- Twenty-eight use the federal effluent limit guideline
- Five use a more stringent limit.

Some states with more stringent effluent limits may partially or totally prohibit discharges related to storm events. In Arkansas, for example, the effluent limit prohibits discharges from liquid waste management systems, including periods of precipitation greater than the 25-year, 24-hour storm event. Both California and North Carolina require no discharges from new waste control structures even during 100-year storms.

A key concern regarding the management of CAFO waste is ensuring appropriate land application. Land application is the primary management practice used by CAFOs to dispose of animal waste. Several estimates indicate that 90 percent of CAFO-generated waste is land applied. Where properly done, land application of CAFO waste fosters the reuse of the nitrogen, phosphorus, and potassium contained in these wastes for crop growth. However, where such wastes are excessively or improperly applied, land application can contribute to water quality impairment. Thirty-four states impose requirements addressing land application either through NPDES or non-NPDES programs. Typical requirements include that CAFO waste be applied at agronomic rates and CAFO operators develop Waste Management Plans.

The breakout of state requirements is as follows:

- Thirty-two states require that CAFO waste be land applied at agronomic rates.
- Twenty-seven states require the development and use of Waste Management Plans.
- One state, Georgia, issues land application system (LAS) permits.

Georgia's land application system permit requires systems to be built and operated according to Natural Resource Conservation Service criteria and requires:

- ***Slow rate spray irrigation at agronomic rates***
 - ***No discharge to surface water***
 - ***Ground water and soil monitoring***
 - ***Buffer zones***
 - ***Quarterly reporting.***
-

Agronomic rates are typically based on the nitrogen needs of crops, although some states specify that waste be applied at agronomic rates for nitrogen and phosphorous. The determination of agronomic rates varies from state to state. Some states do not address how agronomic rates should be determined, while others, such as Colorado, require CAFO operators to complete detailed plans and field sampling to determine the appropriate amount of waste that can be land applied. Several states (e.g., Iowa) allow land application of CAFO waste to exceed agronomic rates if enough land for disposal cannot be found.

The complexity and details required in a Waste Management Plan also vary among states. Some states do not explicitly identify what items must be addressed in a Waste Management Plan, whereas others have detailed requirements. Typically, CAFO operators are required to address the following in a Waste Management Plan:

- Estimates of the annual volume of waste
- Schedules for emptying and applying wastes
- Rates and locations for applying wastes
- Provisions for determining agronomic rates (i.e., soil testing)
- Provisions for conducting required monitoring and reporting
- Written agreements with landowners to accept liquid waste.

2.4 Program Implementation

Some assessment of program implementation is important as there is often a disjunct between the program requirements and the actions taken to implement these programs. Several measures of implementation are discussed below, including the number and type of permits issued, staffing levels, and inspection requirements.

2.4.1 NPDES permits

At least 1,800 NPDES permits have been issued to CAFOs throughout the United States, including facilities covered under general NPDES permits. Thirteen of the 43 states delegated to administer the NPDES program have never issued an NPDES permit to a CAFO.⁹

2.4.2 Non-NPDES permits

The number of non-NPDES permits issued to AFOs greatly exceeds the number of known NPDES permits issued. Although the information is incomplete on the number of state permits issued, more than 45,000 non-NPDES permits or formal authorizations have been issued through state AFO programs. The non-NPDES state authorizations include discharge/operating permits and approvals required for construction of waste disposal systems.

At least 1,800 AFOs are covered under NPDES permits issued by state or EPA Regional office.

More than 45,000 non-NPDES permits and/or formal authorizations have been issued to AFOs by the states.

Several noteworthy points emerge in reviewing the information on non-NPDES permits issued in state AFO programs:

- Minnesota alone has issued nearly 25,000 state feedlot permits.
- Kansas has issued 2,472 state permits, of which 1,500 have been to facilities with more than 300 animal units.
- Indiana has issued more than 4,000 letters of approval to AFOs within the state.
- South Carolina has issued 2,000 construction permits.

⁹ States delegated to administer the NPDES program that have never issued an NPDES permit are: Alabama, Colorado, Maine, Nevada, Michigan, New Jersey, New York, North Carolina, Rhode Island, South Carolina, Tennessee, Vermont, and West Virginia.

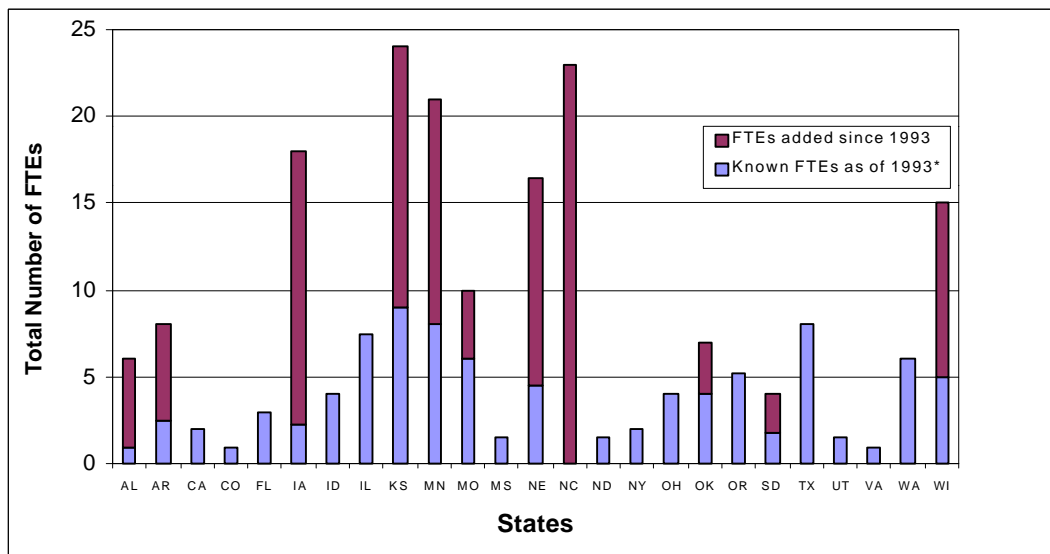


Figure 2.
1998
Staffing
Levels for
Select

State AFO Programs as Measured in Full Time Equivalents (FTEs) and Changes in FTEs over the Past 5 Years.

*Includes states where data on FTEs added since 1993 were not available.

2.4.3 Staffing

The level of state agency staff assigned to address AFOs is depicted in Full Time Equivalents (FTEs) in Figure 2. Although data was not available from all states, state agency staff dedicated to AFOs has increased over the last five years. States such as Arkansas, Minnesota, Wisconsin, and Nebraska doubled their staff commitment to AFOs within the last five years. The most notable increases in state staff assigned to address AFOs were in Iowa and North Carolina. Kansas, Minnesota, and North Carolina have the largest AFO staff in the country, with each having more than 20 FTEs. In general, state staff dedicated to AFOs is relatively small, with average staff numbers being below four FTEs. Several states do not have any staff specifically assigned to manage water quality impacts from AFOs.

2.4.4 Inspections

At least 27 states conduct regular inspections of AFOs. State agencies typically have annual inspection schedules for the largest AFOs (e.g., Mississippi and Nebraska). Some programs, however, complete inspections more frequently. North Carolina requires two regular inspections a year, including a compliance and technical assistance inspection. Kansas has a graduated inspection schedule with the frequency of its inspections based on the size of the facility. In Kansas, facilities with more than 3,725 animal units must be inspected annually, facilities with 1,000 to 3,725 animal units are inspected every 2 years, and facilities with fewer than 1,000 animal units are inspected every 5 years. Many state programs, including programs with regular inspection schedules, also inspect AFOs in response to complaints.

2.5 Recent State Initiatives/Trends

One clear indication that states have an increasing interest in expanding their efforts to control water quality impacts from AFOs is the promulgation of new state AFO regulations and program initiatives. At least 12 states have developed new regulations related to AFOs since 1996. Kansas, Kentucky, North Carolina, and Wyoming passed legislation regarding swine facilities, with Kentucky and North Carolina imposing moratoriums on the expansion of hog AFOs until state management/regulatory plans could be developed. Similarly, Mississippi also has imposed a 2-year moratorium on any new CAFOs.

States that have adopted new environmental regulations for AFOs since 1996

- | | |
|---------------|------------------|
| • Alabama | • Nebraska |
| • Indiana | • North Carolina |
| • Kansas | • Oklahoma |
| • Kentucky | • Vermont |
| • Maryland | • Washington |
| • Mississippi | • Wyoming |
-

Alabama's recent efforts include developing an NPDES general permitting rule and a Memorandum of Agreement outlining state agency responsibilities as they relate to AFOs. Washington's Dairy Law subjects all dairy farms with more than 300 animal units to permitting and requires each facility to develop NRCS-approved nutrient management plans. Indiana's Confined Feeding Control Law also requires AFOs to develop waste management plans and receive state approval for operating AFOs.

Illinois' Livestock Management Facilities Act (LMFA) was adopted in May 1996, and the LMFA emergency rules went into effect in October 1996.

2.6 Summary

As presented in Sections 2.3, 2.4, and 2.5, state efforts to manage AFOs are carried out through issuance of NPDES permits and state issued non-NPDES permits and/or authorizations. State AFO regulatory programs are directed almost exclusively at controlling the potential environmental impacts on surface water. State permits and/or authorization requirements are often imposed regardless of NPDES requirements. State non-NPDES AFO programs are typically more stringent than NPDES programs and state efforts often extend coverage to smaller classes of AFOs. Further, the implementation of state non-NPDES programs often receives more agency attention than the implementation of NPDES programs, with a number of states actively choosing not to use NPDES permits.

While specific state efforts relating to AFOs vary, most states regulate facilities through permitting programs that require animal waste disposal systems to be constructed to prevent the discharge of animal wastes to waters of the United States. Coverage under state permitting programs depends on such criteria as facility size, potential for discharge, type of facility, and type of waste control. Information from across the nation indicates that state agencies are increasing their commitment of resources to address environmental concerns from AFOs.

CHAPTER 3. SUMMARIES OF U.S. ENVIRONMENTAL PROTECTION AGENCY'S REGIONAL EFFORTS TO ADDRESS CONFINED ANIMAL FEEDING OPERATIONS

Introduction

This summary provides basic information on known efforts to address CAFOs by the EPA Regional offices. The chapter is not a comprehensive summary or an analysis of the effectiveness of these efforts. EPA Regional offices submitted information for the summary in response to a request from EPA Headquarters. The information provides a brief overview of the recent efforts and issues of concern to EPA Regional offices.

3.1 EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont)

Until recently, EPA Region 1 has not been directly involved with CAFOs. Preliminary information gathered from state 303(d) lists, U.S. Department of Agriculture's Census of Agriculture (1992), individual state agencies, and the NRCS indicates that there are few CAFOs in the region. CAFOs in the New England region have not severely affected water quality. The appropriate state agency (generally an environmental or agriculture agency) or the NRCS addresses complaints about poorly managed AFOs.

Given the low number of CAFOs in New England, and the management efforts at the state and local levels, EPA focuses on areas where significant water quality impairment has been demonstrated to be caused by CAFOs. EPA Region 1 will continue to support the states in CAFO related issues and will participate in monthly CAFO and Agricultural Forum conference calls with EPA Headquarters.

Because of the heightened national interest in CAFOs, EPA Region 1 expects that the states will continue to address agricultural impacts through the appropriate designated state agency, as well as through working with NRCS. EPA Region 1 also expects that the states will discuss CAFO issues during Performance Partnership Agreements (PPA) negotiations. Additionally, a state's watershed approach should include an evaluation of whether and to what extent CAFOs are contributing to water quality impairments and should use this information to prioritize permits. EPA's future approach to addressing CAFOs will be consistent with the national AFO enforcement and compliance strategies (i.e., size thresholds and environmental impact to water quality). Where there are documented impacts to water quality due to CAFOs, priorities for action will occur at the local, state, and/or federal levels. The implementation of inspections, NPDES permitting, and enforcement may also be necessary for EPA-New England.

In Massachusetts, officials have identified water quality impairments in the Westport River due to CAFOs. Therefore, EPA is directing efforts to permitting CAFOs in the Buzzards Bay area. In Maine, the State has identified the need to develop legislation to manage CAFOs and has requested participation from Region 1. One official CAFO inspection has been conducted in Region 1, and Region 1 is drafting its first CAFO permit in Massachusetts. There are no general or individual NPDES permits for CAFOs in the Region. Staffing in Region 1 is primarily limited to one person who devotes approximately 10 percent of her time as the regional CAFO coordinator. Other Region 1 staff persons typically involved with AFOs are the nonpoint source coordinators.

3.2 Region 2 (New Jersey, New York, Puerto Rico, and the U.S. Virgin Islands)

Both New York and New Jersey are delegated states; therefore, Region 2 will provide guidance to the individual state programs. Currently, Region 2 is developing a regional AFO/CAFO program and is in the preliminary stages of developing a draft permit to cover CAFOs in Puerto Rico. Although the Puerto Rican Environmental Quality Board (EQB) has advised Region 2 that there are no CAFOs in Puerto Rico, a race track appears to meet the CAFO definition. The San Juan (El Comendante) race track houses more than 500 horses and has recently applied for an individual NPDES permit. Currently, Puerto Rico does not have any AFO facilities covered by a NPDES permit, but the EQB is planning to adopt a program that would address small animal feeding operations. No CAFOs exist in the U.S. Virgin Islands.

3.3 Region 3 (Delaware, the District of Columbia, Maryland, Pennsylvania, Virginia, and West Virginia)

The primary AFO issues in Region 3 revolve around poultry and hog facilities. EPA's Region 3 is primarily addressing concern over AFOs through inspections (although EPA has conducted only a few inspections) and public outreach. EPA Region 3 is unaware of inspections completed by state officials. Region 3 has been interacting with the environmental and agriculture agencies in the states through the Poultry Dialogue. Region 3 meets quarterly with the U.S. Department of Agriculture (USDA), state technical committees, Agriculture Research Service, Cooperative Extension Service, and NRCS to discuss AFO activities. The Region gives presentations to stakeholders (producer groups, farm bureaus, sustainable agriculture groups, soil and water conservation districts, environmental groups, land grant universities) to make them aware of current CAFO issues. Currently, the Region has committed 3.0 FTEs to CAFO/AFO activities.

3.4 Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee)

EPA Region 4 is developing a strategy to address AFOs. Region 4 is writing the strategy to include the objectives of the Clean Water Action Plan and to integrate key components of the EPA/USDA Joint Strategy for Animal Feeding Operations. The Region has developed an enforcement strategy that relies on state referral of cases, citizen complaints, and review of state files to identify potential violators. The Region uses its resources to assist states with inspections and enforcement and intends to take federal enforcement action against violators.

Through outreach and networking activities, the Region has developed a good relationship with Region 4 states, and outreach and support activities are a major component of the Region's AFO program. The Region has representatives on all eight state USDA technical committees and provides input through meetings, presentations, written recommendations, workgroups, and other contacts to agriculture organizations (e.g., the Agriculture Research Service, Cooperative Extension Service, NRCS, and Rural Development).

Region 4 meets with the Poultry Water Quality Consortium Steering Committee and assists with information development and dissemination. Regional staff are on the program planning and technical committees of the Southern Sustainable Agriculture Research and Education Program. The focal points of EPA's outreach efforts are the state water quality agencies, departments of agriculture, and soil and water conservation agencies. The Region also has worked with environmental and producer groups.

Region 4 has served on workgroups reviewing, revising, or developing state AFO programs in

several states, including Alabama, Georgia, Tennessee, Kentucky, and North Carolina. Regional staff also serve on the Georgia AWARE Team that focuses on information and education for growers, legislators, and the public regarding animal waste management issues. The Region has assigned 4 FTEs to AFO/CAFO activities, and duties are split between program coordination and permitting (1.5 FTEs) and enforcement (2.5 FTEs).

3.5 Region 5 (Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin)

The draft “Interim Management Strategy for Livestock and Related Waste” describes the approach taken by Region 5 to address CAFOs and other sources of pollutants associated with the production of animal commodities. The Region 5 draft strategy is intended to promote effective implementation of the *Compliance Assurance Implementation Plan for CAFOs* and appropriate elements of the draft “Strategy for Addressing Environmental and Public Health Impacts from AFOs” at the regional and state level. The Region 5 draft strategy advocates a watershed approach by which regulators address AFOs in conjunction with other pollutant sources. The strategy does not focus on any specific segment of the animal agriculture industry. In addition, the regional strategy does not focus on specific size classes of AFOs, since the Region believes such a focus would be contrary to a watershed approach to water resources protection.

All states in the Region are authorized to administer the NPDES program, and several have supplementary livestock waste management programs. As a result, the Region 5 draft Strategy emphasizes the development of state-specific strategies. Regional efforts focus on evaluating and developing state programs, advising producers of NPDES requirements, and conducting inspections.

The Region has dedicated 0.5 FTE from the permitting branch and 0.5 FTE from the enforcement and compliance assurance branch to the AFO program. The Office of Regional Counsel and Geographic Information Systems (GIS) staff also provide support to the program. As of mid-1998, the Region had conducted four CAFO inspections, and it has plans for an additional 15 inspections through 1999. Region 5 has conducted inspections in response to citizen complaints and state requests. The regional draft strategy indicates that regional staff will inspect facilities in the states that have not issued any NPDES permits to CAFOs, with the initial focus on Michigan. This approach will target facilities that have discharged without a permit.

The Region has given presentations to agencies that serve the agriculture industry, livestock producers, environmental and family farm advocates, and State and local government officials in five of the six states. The presentations, which have also been given to the state technical committees of Illinois, Michigan, Ohio, Minnesota, and Wisconsin, have addressed the nature of the existing NPDES CAFO programs, plus the emerging EPA strategies for AFOs. The Region also met with representatives from the regional office of NRCS to explore opportunities for the agencies to work together.

3.6 Region 6 (Arkansas, Louisiana, New Mexico, Oklahoma, and Texas)

Region 6 developed a multi media AFO workgroup that meets weekly to discuss common issues and to respond to requests for information. The workgroup provides input to the development of the regional strategy to support Vice President Gore's *Clean Water Action Plan* and the EPA/USDA combined AFO strategy.

The Region uses the Cumulative Risk Index Analysis (CRIA) to help evaluate cumulative impacts of multiple CAFOs. Regional staffs have made more than 50 CAFO new source permit decisions using this GIS-based methodology. CRIA was recommended as a tool that would help the Region focus inspections on impaired or vulnerable watersheds and develop a baseline for follow up monitoring and measuring of program effectiveness.

The Region sponsored a series of town meetings with the public, industry, and other interested parties on the impact of AFOs on water quality. More than 800 people attended five meetings held over a 2-month period. The information gathered at these meetings will be used to develop future Region 6 AFO policies.

Region 6's existing CAFO general permit expired on March 10, 1998. The Region has drafted a new CAFO permit for reissuance in 1998. The draft CAFO general permit includes two general permits: (1) a general permit for CAFOs in watersheds impaired by CAFO-related activities, such as land application of manure, and (2) a general permit for all CAFOs found outside impaired watersheds in the States of New Mexico, Oklahoma, and Texas. This new approach focuses EPA's permitting effort on CAFO-impaired watersheds and is consistent with the national AFO strategy. Region 6 will identify impaired watersheds based on information submitted to the Region according to Section 303(d) of the Clean Water Act. About 850 CAFOs obtained coverage under the CAFO general permit that expired on March 10, 1998. The expired permit will continue to be in force until the new draft permit becomes effective. Public notice of the final permit is expected in November 1998.

Regional staff currently committed to CAFO/AFO activities are as follows: environmental assessment, 2 FTEs; NPDES permitting, 0.75 FTEs; and enforcement, 2 FTEs.

EPA has worked closely with key partners and stakeholders, including state/tribal representatives, USDA and NRCS, industry, and the public in developing the draft permit, through the review of Environmental Assessments prepared under the National Environmental Policy Act (NEPA) in support of the NPDES permitting program and through the peer review process for the development of the CRIA model.

3.7 Region 7 (Iowa, Kansas, Missouri, and Nebraska)

All four of the Region 7 states have active regulatory programs for feedlots and have been issuing NPDES permits to CAFOs since the early 1970s. These state programs are much broader in scope than the NPDES program and have significant resources (68.5 FTE) devoted to their programs. Because the states within Region 7 have strong state feedlot programs, the Region does not independently pursue regulatory activities related to CAFOs. Region 7 operates in a partnership to complement state efforts rather than duplicate them. The Region devotes approximately 1 FTE to CAFOs and related activities.

Region 7 provides information and assistance to states, industry, environmental groups, and the public. The Region reviews state administered NPDES permit programs to assure that they are

meeting the minimum federal requirements. While Region 7 expects the states to issue permits, track compliance, and take necessary enforcement actions, the Region will conduct a few joint inspections and will take enforcement action when appropriate.

Region 7 staff have participated in various national EPA workgroups and will be active in the upcoming review of and changes to the CAFO NPDES regulations and feedlot effluent guidelines. The Region has worked with the National Pork Producers on several initiatives, including meetings for producers on environmental quality concerns and environmental assurance programs. Projects addressing animal feeding operations have been funded by nonpoint source Section 319 grants.

3.8 Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming)

The National Pollutant Discharge Elimination System (NPDES) program is delegated to all these states. Therefore, the states are responsible for issuing permits, conducting inspections, and carrying out enforcement actions under the NPDES program. EPA only gets involved after receiving a specific complaint. Currently, the Region has formed a team to address and implement the AFO/CAFO action items identified in the *Clean Water Action Plan*. The team includes representatives from the Regional Administrator's Office, the nonpoint source program, NPDES enforcement, NPDES permitting, National Resources Conservation Service (NRCS) and the Office of Communications and Public Involvement. The Region's efforts are primarily focused on outreach, technical assistance, and support of State AFO/CAFO

Region 8 has provided speakers (staff and management) to deliver presentations or otherwise participate in numerous seminars, conferences, training courses, and meetings devoted to AFO/CAFO issues. Audiences include the Denver Regional Council of Governments, the Colorado Cattle Feeders Association, the Utah Farm Bureau, State Agriculture Commissioners, and a delegation from the Japanese Ministry of Agriculture, Forestry, and Fish, among others.

Region 8's NPDES Technical Enforcement Program is working closely with its States to ensure a balance of compliance assistance, compliance inspections, and enforcement follow-up at regulated feedlots, consistent with the Compliance Assurance Implementation Plan for Concentrated Animal Feeding Operations. As a part of State/EPA Performance Partnership Agreements for FY99, each Region 8 State has included a commitment to develop a state-specific CAFO compliance and enforcement strategy, taking into account a State's existing program. Areas that the States have been asked to address include priority watersheds, use of compliance assistance, compliance monitoring and inspections, enforcement, complaint handling, and coordination with local governments and other agencies.

Region 8 supported the State of Utah's efforts to address the environmental impacts of CAFOs by awarding RA discretionary funds for the development of outreach and educational materials for CAFOs.

Region 8 also awarded RA discretionary funds to the Colorado Pork Producers Council in support of the National Pork Producers Council On-Farm Odor/Environmental Assistance Program. These funds made it possible to conduct a training course that will result in eligible participants receiving certification to conduct environmental assessments at hog facilities.

3.9 Region 9 (Arizona, California, Hawaii, Nevada, and the territories of American Samoa and Guam)

Region 9 is working with its states to develop and implement state-specific strategies for animal feedlots. Although Arizona, Nevada, and Hawaii have a number of animal feedlots, the overwhelming number of facilities are in California (over 2400 dairy operations, 200 swine operations, and 700 poultry operations). For this reason, the Region has focused its efforts in California, primarily on the dairy sector.

Arizona is the only R9 state not authorized to implement the NPDES program. The Region is issuing a general NPDES permit to cover the estimated 68 CAFOs in Arizona. Eventually Region 9 intends to expand the scope of the permit to require a pollution prevention plan and manure land application requirements. Due to the minimal impact of CAFOs on Hawaii and Nevada's waterbodies, limited resources have been put towards CAFO work in those two states.

The State of California's 303(d) list reports a significant number of surface water bodies that have been impaired by dairy operations and other agricultural runoff. The Region is working with a variety of state and federal agencies to inspect CAFO facilities, to provide recommendations and compliance assistance and also to take enforcement actions, as needed. The Region meets monthly with NRCS, the state water resources control board, several regional water quality control boards, the UC Davis Extension and county agencies to coordinate our efforts. The UC Extension has developed an in depth short course on environmental compliance for dairy operators that has been well received by the industry. The state Department of Food and Agriculture and industry groups are developing a quality assurance program that will include 3rd party evaluations of dairy facilities for environmental compliance and an extensive education and outreach program. Part of this program is a partnership agreement that is to be signed by appropriate state and federal agencies. The Region is participating in the quality assurance program and is also negotiating partnership language that is consistent with the unified AFO strategy and with applicable federal statutes, so that EPA can be a signator.

Region 9 conducted 200 inspections of animal feedlot facilities in 1998, issued 3 administrative compliance orders and 2 administrative penalty orders. We intend to continue an active outreach, inspection and enforcement program in 1999, if resources are available. Region 9 devotes approximately 3.0 FTE for enforcement and compliance assistance and 0.3 FTE for permitting.

3.10 Region 10 (Alaska, Idaho, Oregon, and Washington)

Region 10 has adopted a watershed approach for addressing AFOs that consists of three components: (1) permitting, (2) inspections, and (3) enforcement. To effectively use limited resources, the Region focuses its AFO activities on watersheds with known water quality impairment. The Region's goal is to encourage the states to regulate AFOs and have the state resource agencies implement effective CAFO programs. EPA's approach in each state is to include all stakeholders, including state agencies, in the regulation of CAFOs. The limited resources available to the Region (Region 10 estimates that six FTEs are committed to CAFO/AFO activities) dictate the need for partnerships with other agencies to effectively regulate CAFOs.

One such partnership developed by Region 10 is with the USDA and the NRCS. Since the USDA/NRCS plays a major role in the regulation of CAFOs, Region 10 exchanges information with the USDA/NRCS regarding individual facilities, refers individual facilities to NRCS for assistance to correct problems, and coordinates educational efforts directed at producers with the

Cooperative Extension Service.

Region 10 conducts outreach and educational activities to maintain contact with stakeholders. For example, this was done through public meetings before conducting inspections in Washington in 1997. In Tillamook, Oregon, the Region conducted a mock inspection to show producers what to expect from an inspection visit before conducting official inspections. The Region also provides compliance assistance when needed.

In the past two years, the level of effort applied to CAFO activities has increased due to EPA's increased presence in Washington. In 1997, Region 10 began conducting independent watershed-based inspections of dairy operations suspected of discharging wastes to surface waters. The Region initiated enforcement action under 309(a) and (g) to operations discharging wastes and sent warning letters to operations thought to have the potential for discharges. Region 10 also sent congratulatory letters to a few operations for good waste management. Within a few months of conducting the inspections in Washington, state legislators, industry, and the Washington Department of Ecology requested EPA's assistance in developing new legislation to establish an effective state program. The Washington legislature passed such legislation in spring 1998. The state legislature did not, however, provide the resources needed to fully implement the program. EPA intends to conduct targeted inspections in Washington until the state has implemented its own inspection/enforcement program.

Background

Alabama is primarily concerned with ensuring water quality and odor attenuation with the implementation of its new AFO/CAFO program. The Rules require proper management of waste collection, storage, transport, disposal, land application, etc. and includes siting buffers. Alabama is considering moving toward a phosphorous standard as appropriate through NRCS technical standards and guidelines to determine appropriate agronomic rates.

1.0 Lead Regulatory Agency

The Alabama Department of Environmental Management (ADEM), Field Operations Division, has jurisdiction over animal agriculture environmental permitting and compliance.

2.0 Lead Agency for Voluntary Programs

ADEM CWA Section 319 program, Alabama Soil and Water Conservation Committee (ASWCC) and Districts, Alabama Cooperative System (ACES), NRCS, and others.

3.0 Other State Agency Involvement

Compendium of State AFO Programs

As part of Alabama's Rules, the State developed a Memorandum of Agreement (MOA) outlining the responsibilities of the different State and Federal resource agencies as they relate to management of AFOs and CAFOs.

The final signatories of the MOA executed in May, 1998 include:

- Alabama Cooperative Extension System
- Alabama Department of Agriculture and Industries
- Alabama Department of Environmental Management
- Alabama Department of Public Health
- Alabama Soil and Water Conservation Committee
- College of Agriculture at Auburn University
- USDA - Natural Resource Conservation Service

The Alabama Department of Agriculture and Industries with assistance from the MOA signatory agencies will manage the Certified Animal Waste Vendor (CAWV) Program.

4.0 State Regulations Regarding CAFOs

Water quality is governed through Alabama's National Pollution Discharge Elimination System Program, ADEM Admin. Code Chapter 335-6-6. Section 335-6-6-.10. identifies CAFOs, detailed in Chapter 335-6-7 and described by 40 Code of Federal Regulations (CFR) 122.23 and 40 CFR 122 Appendix B, as a category that requires NPDES permits.

Compendium of State AFO Programs

Alabama administrative Code Chapter 335-6-7 establishes minimum qualifications, standards, requirements, best management practices, land application practices, and waste storage and disposal requirements to protect water quality within the state pursuant to the requirements of the NPDES program.

5.0 State Voluntary Programs

The Alabama Cooperative Extension System (ACES) with the assistance of the MOA signatory agencies will coordinate training operators of CAFO waste systems which will reduce CAFO permitting fees for those operators who receive training.

6.0 Type of Permits

NPDES

Alabama is authorized to issue individual NPDES permits and General permits. The AFO/CAFO Rules implement a comprehensive AFO compliance assistance and compliance assurance program and a CAFO registration administrative program (permit by rule) which provides NPDES permit coverage analogous/equivalent to the NPDES General Permit process. Prior to April 1, 1999, Alabama did not issue NPDES permits to CAFOs. The newly promulgated Rules were publicized through six statewide public question & answer meetings in July-August 1998, and a formal public notice and hearing in December 1998.

Other

Operations are inspected and regulated by the Alabama Department of Agriculture and Industries to ensure proper diseased animal and animal morality management.

7.0 Permit Coverage

Alabama regulations (335-6-6-.10) governing water quality require NPDES permits for CAFO as defined in ADEM Admin. Code Chapter 335-6-7 and as described in 40 Code of Federal Regulations (CFR) 122.23 (1994) and 40 CFR Part 122 (1994) Appendix B. The regulations (Rule 335-6-7-.03) requires registration from all CAFO's, and requires as appropriate registration of AFOs generally defined in 40 CFR 122.23(b)(1). A Notice of Registration (NOR) is required for all new and existing facilities and approval of registration constitutes NPDES permit coverage as provided in Chapter 335-6-6.

8.0 Permit Conditions

Approvals

Initial construction or expansion of an AFO that exceeds 5 acres must register under Chapter 335-6-7 or obtain coverage under ADEM Construction General Permit ALG610000.

Lagoon Design and Specifications

All design and construction standards must meet or exceed NRCS standards and guidelines and must be approved by a qualified credential professional (QCP). Freeboard

Compendium of State AFO Programs

can not be less than 12 inches in addition to adequate operating storage and storage of the 25-year 24-hour storm event and a subsurface soil investigation must be performed to determine the suitability of the waste containment structure to and liner requirements.

Discharge Rules

Discharge from any AFO to waters of the state are prohibited except in the event of a 25-year, 24-hour storm event, provided that waste management practices that meet NRCS technical standards and guidelines have been fully implemented and maintained.

Separation Distances

Animal liquid waste containment buildings or containment structures for new operations must be at least 1,320 feet from nearest existing occupied dwelling, church, school, hospital or park, and 500 feet of any property line. New dry waste confinement buildings or containment structures must not be within 330 feet of occupied buildings or parks. Other buffer distances designed to ensure water quality or odor attenuation apply for a variety of additional circumstances.

Waste Management Plans

An approved Waste Management System Plan (WMSP) is required for all NPDES registered facilities.

Pollution Prevention Plans

Compendium of State AFO Programs

In addition to a WMSP, pollution prevention plans (PPP) are required to be developed and implemented by CAFO facilities in accordance with the EPA storm water rules promulgated on November 19, 1990. The requirements for a PPP shall be considered to be met by a facility that has been properly designed and received registration approval (335-6-7-.28).

Land Application Requirements

Land application of waste/wastewater (outlined Rule 335-6-7-.26) shall be in accordance with NRCS technical standards. This includes not applying wastes on frozen soil, near ONRW or surface waters, or on slopes with steep grades. Land application sites must be identified in the WMSP.

9.0 Number of AFO/CAFO facilities permitted

Registration process starts April 1, 1999 and the initial registration deadline is September 31, 1999.

10.0 Enforcement

Graduated compliance process that ranges from compliance assistance and education/outreach, oral warning, written warning, notice of violation (NOV), administrative order with/without fine, civil litigation, criminal prosecution. Action by ADEM predicated on statutory considerations such as level of non-compliance, history of non-compliance, degree of environmental harm, standard of care, ability to pay fine, etc.

11.0 Inspection Programs

Routine inspections will be conducted under the new AFO/CAFO program. Emphasis will be placed on responding to complaints and inspecting all facilities in water quality impacted/impaired watersheds.

12.0 Support

The state legislature appropriated \$350,000 to implement the proposed ADEM AFO compliance and CAFO NPDES registration program for fiscal year October 1998 through September 1999. As of February 25, 1999, Alabama has 3.5 staff years dedicated to AFO issues but is working to assure continuing resources to increase to at least 5 staff years.

13.0 Case Studies/Innovative Programs

Permit by Rule NPDES registration administrative system

Certified Animal Waste Vendor Program (CAWV)

Interagency MOA

Integrated, outline AFO/CAFO information and registration databases

14.0 References

ADEM, Field Operations Division staff

Environmental Law Institute. 1997. Enforceable State Mechanisms for the Control of Nonpoint Source Water Pollution. Environmental Law Institute.

Jessup, D. H. 1990. Guide to State Environmental Programs. The Bureau of National Affairs, Inc. Washington, D.C.

U.S. Environmental Protection Agency Region 4 staff.

1.0 Lead Regulatory Agency

Unidentified.

2.0 Lead Agency for Voluntary Programs

Unidentified.

3.0 Other State Agency Involvement

Unidentified.

4.0 State Programs Regarding CAFO

Unidentified.

5.0 State Voluntary Programs

Unidentified.

6.0 Types of Permits

NPDES

Alaska is not authorized to administer the NPDES program. Therefore, the federal CAFO regulations apply within the state.

Other

Unidentified.

7.0 Permit Coverage

Unidentified.

8.0 Permit Conditions

Approvals

Unidentified.

Lagoon Design and Specifications

Unidentified.

Discharge Rules

Nondelegated state must follow federal effluent limit.

Unidentified.

Separation Distances

Unidentified.

Land Application Requirements

Unidentified.

Other Permit Conditions

Unidentified.

9.0 Number of CAFO Facilities Permitted

EPA Region 10 has not issued any CAFO permits in Alaska (Roberto, Region 10, pers. com., 1997).

10.0 Enforcement

Unidentified.

11.0 Inspection Programs

Unidentified.

12.0 Support

Unidentified.

13.0 Case Studies/Innovative Programs

Unidentified.

14.0 References

Roberto, Joe. U. S. Environmental Protection Agency, Region 10. Summary of state program information sent to Ruth Much (SAIC), Fall 1997.

Background

The Arkansas Department of Environmental Quality (ADEQ) has been issuing permits for animal feeding operations since 1970 under the authorities contained in the Arkansas Water and Air Pollution Control Act. Most confined animal feeding operations in Arkansas are relatively small operations, although the number of large livestock and poultry facilities within the state have been increasing (Quinn, 1993). Arkansas is currently the largest poultry producing state in the U.S. (USEPA, 1998).

1.0 Lead Regulatory Agency

The Arkansas Department of Environmental Quality (ADEQ) has regulatory authority over environmental aspects of livestock feeding operations and is authorized by EPA to administer the NPDES program.

2.0 Lead Agency for Voluntary Programs

Unidentified.

3.0 Other State Agency Involvement

Arkansas Soil and Water Conservation Commission has primary authority for implementation of the nonpoint source program (USEPA, 1998).

4.0 State Regulations Regarding AFO

The Arkansas Water and Air Pollution Control Act provided ADEQ the authority and guidance to permit CAFOs and prohibit discharges under the NPDES program.

Arkansas State Regulation No. 5, *Liquid Animal Waste Management Systems*, was established to set the minimum qualifications, standards, and procedures of permit issuance for confined animal feeding operations using liquid animal waste management systems and for land application of animal waste. State Regulation No. 5 formalized the permitting process used in Arkansas for several years.

5.0 State Voluntary Programs

Unidentified.

6.0 Type of Permits

NPDES

Arkansas is a delegated NPDES state. Facilities with more than 1,000 animal units are covered under the state issued NPDES general permit.

Other

The ADEQ issues “no discharge” water pollution control permits for all confined animal feeding facilities with less than 1,000 animal units that have a liquid waste disposal system. Construction and operating permits are required before developing a waste disposal system (State of Arkansas, Regulation No. 5, Liquid Animal Waste Management Systems, 1992).

Section 7 of Regulation No. 5, *Liquid Animal Waste Management Systems*, allows for separate permitting for a land application site if the owner submits a site management plan and a detailed nutrient application plan.

7.0 Permit Coverage

All confined feeding animal facilities that use a liquid waste management system are required to be covered under a permit (either general NPDES permit or other state permit) issued by ADEQ, despite size. All new and existing CAFOs (defined as 1,000 animal units or more) may be covered under Arkansas’s NPDES general permit after submitting a Notice of Intent.

Permits are not required for dry waste management systems.

8.0 Permit Conditions

Approvals

Operators of liquid animal waste management systems must first seek and receive plan approval from the ADEQ before construction can begin, regardless of the type of permit the facility must have (State of Arkansas, Regulation No. 5, Liquid Animal Waste Management Systems, 1992). Also, CAFO operators who intend to be covered under the NPDES general permit must submit a Notice of Intent that describes the methods for processing wastes, name of receiving waters, types and number of animals, along with other relevant information.

Lagoon Design and Specifications

Settling basins and holding ponds must contain all process generated wastewater and contaminated runoff from an animal feeding operation. The freeboard capacity of a holding pond must be maintained at not less than 12 inches plus 25-year, 24-hour storm event. Holding ponds must be outside the 100-year flood plain unless the facility is protected from damage that might occur during a flood (ADPCE, 1993).

Discharge Rules

All general and individual permits are considered as “no discharge” permits and prohibit the direct discharge of any waste to waters of the state, including periods of precipitation greater than the 25-year, 24-hour storm event.

Waste Management Plans

Compendium of State AFO Programs

All permitted facilities must have a waste management plan for the animal feeding operation and a site management plan for each land application site prepared by a registered engineer or other certified personnel from the U.S. Department of Agriculture (USDA) or Arkansas Soil and Water Conservation District. Waste management plans are to be developed according to the USDA Soil Conservation Service Technical Guide. These plans must address the timing of applying wastes to agricultural lands with respect to the nutrient uptake of the crops being raised and must identify measures to control off-site odors (State of Arkansas, Regulation No. 5, Liquid Animal Waste Management Systems, 1992).

Each facility under Arkansas's general permit must establish a pollution prevention plan that details the minimum measures necessary to reduce or eliminate the potential for discharges of pollutants. The plan can reference the waste and site management plans, but facilities may be required to submit a pollution prevention plan in addition to the other plans (ADPCE, 1993). Listed below are a few of the topics that must be addressed in the pollution prevention plan.

- Site conditions
- Wastewater management controls
- Lagoon retention capacity calculations
- A schedule and procedure for liquid waste removal
- Lagoon liner design and maintenance

Separation Distances

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Structures for liquid animal waste management systems cannot be constructed within 1,320 feet of the nearest occupied dwelling if designed for confined animal operations with a capacity greater than 600 beef cattle, 430 dairy cows, 1,500 finishing hogs, 600 sows, 33,000 turkeys, or 130,000 chickens. A 500-foot buffer is required for all other facilities (State of Arkansas, Regulation No. 5, Liquid Animal Waste Management Systems, 1992).

Land application of waste is prohibited within 100 feet of waters of the state, including sinkholes, wells, and rock outcrops, or 300 feet of extraordinary resource waters. Also, land application of waste must be at least 50 feet from property lines and 500 feet from neighboring dwellings (State of Arkansas, Regulation No. 5, Liquid Animal Waste Management Systems, 1992).

No animals from the confined facility are allowed contact with flowing surface waters (ADPCE, 1993).

Dead animals must not be disposed within 50 feet of rock outcrops, 100 feet of property lines, 300 feet of waters of the state including groundwater conveyances and wells, 100 feet of intermittent streams, and 500 feet of neighboring occupied dwellings.

Land Application Requirements

Arkansas Regulation No. 5, *Liquid Animal Waste Management Systems*, establishes the minimum qualifications for issuance of permits for land application sites. Land application of waste is not allowed on soils that are frozen, snow or ice covered, saturated, or when significant precipitation is expected within the 24 hours following application. Wastewater

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cannot be applied on slopes of more than 15 percent in any manner that will allow waste to enter waters of the State (State of Arkansas, Regulation No. 5, Liquid Animal Waste Management Systems, 1992). Records of all land applications of waste must be maintained including weight/volume and acreage over which the load was applied, and a sample of the waste must be analyzed annually for pH, total nitrogen, ammonia, potassium, phosphorus, and percent solids.

Training Requirements

All managing owners and operators of liquid animal waste systems must complete a minimum of four hours of formal education and training in waste management and odor control (State of Arkansas, Regulation No. 5, Liquid Animal Waste Management Systems, 1992).

9.0 Number of AFO/CAFO facilities permitted

In 1990, Arkansas had issued 860 Liquid Animal Waste System permits to animal feeding operations and there were 1,648 animal feeding operations with more than 300 animal units (USEPA, 1993). The latest reports indicate that ADEQ has issued Liquid Animal Waste System Permits to approximately 550 animal feeding operations and that 20 percent of those permitted facilities meet the Federal definition of a CAFO (USEPA, 1998; A. Senkayi, EPA Region 6, pers. com., 1997).

10.0 Enforcement

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Arkansas Department of Environmental Quality has an *Enforcement Tracking List* to record reported violations and note what corrective/punitive actions were taken against the animal feeding operation. Civil and/or criminal penalties can be assessed against any person who violates any provision of the Arkansas Water and Air Pollution Control Act. Furthermore, the ADEQ can recover payment to the Arkansas Game and Fish Commission for natural resource damages (USEPA, 1993).

Criminal penalties, including imprisonment, can be imposed for up to one year and/or a fine of \$25,000 can be imposed on anyone who violates any provision of the Arkansas Water and Air Pollution Control Act. Animal feeding operations that are out of compliance with Arkansas rules and regulations may not be allowed to seek coverage under the state's general NPDES permit and could have to file for an individual permit.

11.0 Inspection Programs

Inspections typically occur every two years for facilities with liquid waste management system permits (A. Senkayi, EPA Region 6, pers. com., 1997). The permittee must inspect waste control structures four times a year. Under the NPDES general permit Arkansas farmers have to maintain records of inspections completed by the permittee (USEPA, 1993).

12.0 Support

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EPA (1993) reported that Arkansas has 2.5 FTEs dedicated to NPDES permitting, including industrial permits other than livestock facilities. Currently, there are 8 FTE committed to the states AFO program (USEPA, 1998).

13.0 Case studies/Innovative Programs

The ADEQ has issued moratoriums on the issuance of new liquid animal waste facilities in certain watersheds until existing facilities comply with permit conditions.

Large swine and poultry facilities that are under contract with major processing companies usually have permits because the processing companies police their own waste control systems to ensure compliance with environmental regulations. Large contractors prefer that contracted swine and poultry facilities have liquid waste management system permits and even specify a permit as a condition of the contract.

The ADEQ reports unpermitted facilities and violators to the general contractors.

14.0 References

Arkansas Department of Pollution and Control Ecology. 1993. Draft General Permit Requirements. Permit No. ARG010000.

Quinn, R.H. 1993. Memo to Ruby Cooper Office of Water Enforcement and Compliance, U. S. Environmental Protection Agency. Memo regarding Arkansas proposed general

Compendium of State AFO Programs

permit for concentrated animal feeding operations from R.H. Quinn Assistant Chief

Water Division State of Arkansas Department of Pollution Control and Ecology.

Senkayi, A. Environmental Protection Agency Region 6. Summary of state program information sent to Ruth Much (SAIC), Fall 1997.

State of Arkansas, Regulation No. 5, Liquid Animal Waste Management Systems, 1992.

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions Compiled by G. Beatty, EPA, Office of Water, Washington, D.C.

U.S. Environmental Protection Agency. 1993. The Report of the EPA/State Feedlot Workgroup. Office of Wastewater Enforcement and Compliance, Washington, D.C.

Background

Approximately 277 AFOs and 68 CAFOs operate in Arizona. Arizona animal feeding operations include 160 dairy operations, 45 swine operations, 6 poultry operations, 26 cattle operations and 25-30 ostrich operations. Currently, the number of AFOs and CAFOs appears to be static (U.S. EPA, 1998). Approximately 70% of Arizona's CAFOs exist in west Maricopa County.

Although Arizona's 1996 Water Quality Assessment listed waterbodies impaired from stressors such as nutrients and coliforms, no waterbodies were listed specifically due to CAFOs (U.S. EPA, 1998).

1.0 Lead Regulatory Agencies

The Arizona Department of Environmental Quality (ADEQ) administers non-point source programs to minimize the impacts of CAFOs on surface water and groundwater of the state. EPA Region 9 has issued a general NPDES permit to cover CAFO facilities in Arizona (Oda, 1997).

2.0 Lead Agency for Voluntary Programs

ADEQ Water Quality Division engages in extensive outreach and educational activities to assist CAFO operators.

3.0 Other State Agency Involvement

Unidentified.

4.0 State Regulations Regarding CAFO

Arizona Revised Statutes (ARS) 3-1451 through 3-1456 define beef cattle feedlots, require feedlot operators to obtain a license, provide standards of operations for feedlots, outline the powers and duties of the Water Quality Division, and refer to the authority to suspend or revoke licenses (ALIS Online). ARS 49-247 and 49-248 refer to Arizona's agricultural general permits. Groundwater contamination is addressed by Arizona's Groundwater Protection Act. Air regulations are applied according to the Federal Clean Air Act. Wetlands are protected by flood control district/Natural Resources Conservation Service general guidelines (NASDA, 1997).

5.0 State Voluntary Programs

The Non-point Source Discharge program uses a combination of regulatory controls and cooperatively-based implementation to address CAFO wastes. The cooperation of community-based watershed advisory groups is vital to the state's non-point source program (ADEQ, 1997).

Natural Resources Conservation Service (NRCS) and Arizona universities provide farmers with environmental management seminars, BMP seminars, and technical assistance.

Technical and financial assistance is also available to CAFOs through Agua Fria - New

River and Buckeye - Roosevelt Natural Resource Conservation Districts (NRCDs).

Finally, one EPA 319 grant was used for an AFO related activity in Arizona (U.S. EPA, 1998).

6.0 Types of Permits

NPDES

Arizona is not delegated to issue NPDES permits (U.S. EPA, 1998). EPA Region 9 has a general NPDES permit for CAFOs, although the Region has not issued any CAFO permits in Arizona. The general permit is expired, but it still applies to the Region's permit holders. Region 9 expects to have an updated general permit in FY 1998 (Oda, Region 9, pers. com., 1997).

U.S. EPA Region 9 and the State of Arizona would like to develop a state NPDES general permit to cover all 68 of the State's CAFOs. In addition to increasing the number of CAFOs covered by the general permit, U.S. EPA intends to expand the scope of the permit to require a pollution prevention plan and manure land application requirements (U.S. EPA, 1998).

Other

All Arizona CAFOs are required to seek coverage under Arizona's Agricultural General permit, or the statewide CAFO permit. Some CAFOs are permitted under Arizona's groundwater program. The application of liquid wastes requires extensive permits.

[These permits were not identified.] All operators of beef cattle feed lots that have more than 500 head of cattle are required to obtain a 1-year, renewable license to operate the facility (ALIS Online).

7.0 Permit Coverage

Facilities that meet the Federal animal unit threshold must obtain coverage under the Federal CAFO general permit. Regardless of size, those facilities that are significant pollution sources are treated as CAFOs at the Federal level. The State issued a CAFO general permit to cover all CAFOs. The threshold for obtaining a beef cattle operators license is 500 head of cattle.

8.0 Permit Conditions

Approvals

A site appraisal by NRCS is required before the development of waste structures.

Lagoon Design Specifications

Facilities are not required to follow specific design standards unless a violation occurs. While there are no stipulations on lagoon seepage, the storage capacity of waste structures must conform to NRCS standards. NRCS provides technical assistance to farmers (NASDA, 1997).

Discharge Rules

Nondelegated states must follow federal effluent limit - no discharge except during 25-year, 24-hour storm.

Waste Management Plans

Unidentified.

Separation Distances

Local zoning determines the separation distance between waste structures and dwellings or property lines. One hundred feet must separate animal waste structures from water wells. The required distance from the bottom of a waste structure to the groundwater surface varies (NASDA, 1997).

Land Application Requirements

Agronomic standards are in place for land application of solid manure.

Other Requirements

Facilities must be closed in a manner that minimizes the discharge of nitrogen pollutants.

9.0 Number of CAFO Facilities Permitted

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A 1984 EPA NPDES permit exists for 20 CAFOs. Arizona and Region 9 hope to develop a NPDES general permit that would cover all 68 CAFOs (U.S. EPA, 1998).

10.0 Enforcement

Violators are identified through inspections and complaints. In some cases, enforcement actions are taken.

11.0 Inspection Programs

Inspections are prompted by complaints as routine on-site inspections are not required (NASDA, 1997; U.S. EPA, 1998). Dairies are currently the focus of the Region's CAFO program. The Region 9 Enforcement Division inspects dairies to determine number of animals, acres used for land disposal, and adequacy of waste lagoons (Oda, Region 9, pers. com., 1997).

During the 2nd quarter of fiscal year 1998, EPA and ADEQ conducted 6 joint CAFO inspections. The inspections focused on large CAFOs in Maricopa County and covered a good spectrum of the types of CAFOs in Arizona (3 dairies, 1 beef feedlot, 1 hog farm and 1 chicken farm). Using joint inspections, Arizona may be able to achieve the CWAP goal of inspecting all of its 68 CAFOs within 5 years (U.S. EPA, 1998).

12.0 Support

Unidentified.

13.0 Case Studies/Innovative Programs

Unidentified.

14.0 References

ALIS Online. (No Date). Arizona Revised Statutes. [Online]. Available:

<http://www.azleg.state.az.us/ars/> [1998, January 5].

National Association of State Departments of Agriculture (NASDA). 1997. Summary Matrix of State Survey on Waste and Manure Management Regulations.

Oda, Terry. U. S. Environmental Protection Agency, Region 9. Summary of state program information sent to Ruth Much (SAIC), Fall 1997.

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Water Quality: Non-point Source. (1997, June 16). [Online]. Arizona Department of Environmental Quality. Available: <http://www.adeq.state.az.us/water/non/non.htm> [1997, December 19].

Background

California agricultural animal production nationally ranks first in eggs, first in dairy, second in sheep and lambs, seventh in beef and eighth in poultry. California has over 2400 dairy operation, over 200 swine operations and over 700 poultry operations. There are an estimated 2.5 million cows in California, and approximately 1.3 million head are being raised on 38 feedlots (U.S. EPA, 1998).

The State of California indicated that surface water and ground water are impacted by some of these dairy operations. The 1996 California State Water Board's Section 303(d) list of water bodies impaired by dairies include Estero Americano, Estero de San Antonia, Laguna de Santa Rosa, Stemple Creek, Tomales Bay, Lone Tree Creek, Temple Cree, Chino Creek, the Prado area of Mill Creek, and Santa Ana River. The State Board named five of these waters as highest priority for the development of Total Maximum Daily Load (TMDLs) within the next two years. Additionally, California's 305(b) report lists 22 ground water basins covering over 10,477 square miles as impaired by dairies (U.S. EPA, 1998).

The State is currently working with Region 9 to develop a statewide strategy for addressing animal waste. The State Water Quality Control Board Non-Point Source program is adopting a statewide cooperative approach similar to the rangeland plan adopted in California (U.S. EPA, 1998). Region 9 also organized a monthly forum that meets monthly with NRCS technical advisors, State and Regional Boards, UC Davis and Resource Conservation Districts fostering communication between agencies on CAFO issues.

1.0 Lead Regulatory Agencies

The State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs) regulate the discharge of animal wastes into state waters (California Permit Handbook, 1997).

2.0 Lead Agency for Voluntary Programs

Unidentified.

3.0 Other State Agency Involvement

California's Integrated Waste Management Board has set standards to safeguard public health and well-being that may have an impact on animal waste management at confined animal feeding operations.

Central Valley area leads the Multi-Agency Dairy Task Force. The task force targets incidents of dairy discharges to surface water in Sacramento, San Joaquin, Stanislaus and Merced counties. During winter/spring 1998, the Task Force investigated surface water pollution caused by discharges of dairy waste water in the Central Valley. Participating agencies include CA Fish and Game, Central Valley Regional Water Quality Control Board, Department of Toxic Substances Control, San Joaquin Co. D.A., U.S. Fish and Wildlife, U.S. Attorney's Office, Office of the Attorney General, CA Department of Food and AG, Stanislaus County D.A., and U.S. EPA Region 9.

4.0 State Regulations Regarding CAFOs

Regulations that apply to animal feedlots may be found in Title 14, Title 22, and Title 23 of California Code of Regulations (California Permit Handbook, 1997). Additional waste management rules are found under California Code of Regulations Article 8 (Agricultural Solid Waste Management Standards). There are no wetland or air quality regulations that address CAFOs in California (NASDA, 1997).

5.0 State Voluntary Programs

California EPA (Cal/EPA) created “One-Stop” Permit Assistance Centers throughout the state that provide regulatory compliance assistance and on-site permit expertise to businesses needing guidance through the state and local regulatory systems.

Implementation of Water Quality Assurance Plan is another voluntary program that addresses CAFO-related issues (NASDA, 1997).

The Agricultural Extension Programs provide additional support to California farmers. UC Davis Cooperative Extension has farm advisors with good animal waste issue expertise. Also, the Extension’s Livestock Waste Management Specialist teaches a well-attended environmental stewardship short course for California dairy operators (U.S. EPA, 1998). University of California Cooperative Extension provides coordination and technical support for the regular meetings of the Sonoma/Marin Animal Waste Committee. The Committee is an informal group of agriculturalists, federal and state agency staff, consultants, and Farm Bureau members and staff that discusses waste

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management issues and solutions and assists dairy operators with state and federal water quality control regulations.

Over \$450,000 in Section 319 grants have been awarded since 1995 toward AFO assessment and education. These funds have been used toward projects in Marin-Sonoma. The Bay Area Resource Conservation District (RCD) received a Section 319 grant to assess and address solutions for problems related to horse operations (U.S. EPA, 1998).

Within the state, the California Dairy Quality Assurance Committee works proactively on animal and food safety issues. The Committee members include USDA, CDFA, Western United Dairymen, Milk Producers Council, California Dairy Campaign, Farm Bureau Dairy Group and producers and processors (U.S. EPA, 1998).

6.0 Types of Permits

NPDES

California does not issue individual NPDES permits to CAFOs (Oda, Region 9, pers. com., 1997). Animal feedlot operators must apply for coverage under the CAFO general NPDES permit from a Regional Water Resource Control Board (RWQCB) to discharge to surface waters in California. Other NPDES permits for storm water runoff discharges may be required prior to construction of CAFOs (California Permit Handbook, 1997).

California is considering the use of a state NPDES general permit. Santa Ana Regional Board already covers most of its 340 dairy operations under a general NPDES permit.

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The general permit used in Santa Ana prescribes waste discharge requirements for animal confinement facilities, and permits the discharge of storm flows from facilities during chronic, cumulative, and catastrophic storm events and/or rainfall which totals more than the 25-year, 24-hour storm event (U.S. EPA, 1998).

Other

CAFO operators may be required to obtain a Waste Discharge Requirements Permit (WDRs) from a RWQCB in the project area. The permit applies to any facility that discharges or proposes to discharge wastes that may affect ground water, or that are released in a diffuse manner. The State and counties regulate dairy wastes by requiring dairies to get a construction permit.

7.0 Permit Coverage

The owner or operator of any facility that proposes to discharge to surface waters must obtain an NPDES permit. The application must be submitted 180 days before the start of the proposed activity. The owner or operator of any facility that proposes to discharge wastes in such a way that groundwater may be affected must obtain a Waste Discharge Requirements Permit. The application is due 120 days before the start of the activity (California Permit Handbook, 1997).

8.0 Permit Conditions

Approvals

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The state appraises waste structure sites before development, and farmers are required to follow specific design standards (NASDA, 1997).

Lagoon Design and Specifications

Lagoons must be lined or underlined with soils containing 10 percent clay and 10 percent gravel. An artificial material of equivalent permeability is acceptable (NASDA, 1997).

Discharge Rules

Existing waste structures must contain wastes during a 25-year 24-hour storm event. Retention ponds must be able to handle 20 year peak stream flows. New structures are required to retain wastes during 100-year storms (NASDA, 1997).

Waste Management Plans

Unidentified.

Separation Distances

The separation distance between waste structures and property lines is controlled by local zoning. County standards determine separation distance from dwellings and how close animal waste structures can come to groundwater. The state requires water wells to be

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50-100 feet from any animal enclosure and 100-150 feet from wastewater lagoons 8 feet or greater [width or depth not specified] (NASDA, 1997).

Land Application Requirements

Land application of animal wastes is limited to “reasonable rates” that do not result in surface runoff (NASDA, 1997).

Other Requirements

Specific guidelines for waste management plans have not been identified, but the California Integrated Waste Management Board requires that animal wastes be handled and disposed of in a manner that prevents excessive vectors (e. g., flies, mosquitoes, cockroaches, rodents). Excessive odor, dust, and feathers must also be controlled to protect public health and well-being. Animal carcasses from CAFOs must be collected, stored, and removed in a manner approved by the state enforcement agency.

9.0 Number of CAFO Facilities Permitted

The Santa Ana Regional Board covers most of its 340 dairy operations under a general NPDES permit (U.S. EPA, 1998).

10.0 Enforcement

Dairy enforcement in the Central Valley area increased within the past year (U.S. EPA, 1998).

11.0 Inspection Programs

Routine site inspections are not required by the state. Inspections, prompted by complaints, are used to identify violators (NASDA, 1997). The enforcement agency may also inspect agricultural operations to enforce public health and well-being standards. The need and frequency of these inspections are based on complaints, the size of the facility, the potential of the facility to create excessive vectors and the proximity to residential properties.

California conducts ground and surface water inspections by separating CAFO inspections into 3 geographical areas: Marin/Sonoma, Central Valley and Chino Basin. Inspectors focus first on areas where the state has not been active and where there is a high concentration of CAFO facilities. The inspectors conducted 200 Federal inspections of dairy sites in Stanislaus, San Joaquin and Merced counties in winter/spring 1998 (U.S. EPA, 1998).

The Regional Board had only one inspector to inspect and enforce waste disposal on 1600 dairy farms in the Central Valley area until the recent hire of one additional inspector. During and immediately following storm events, these staff spend most of their time following up on complaints, conducting inspections, and performing surveillance in the dairy area of Central Valley to assure that wastewater discharges are curtailed as soon as possible (U.S. EPA, 1998).

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The Multi-Agency Dairy Pollution Task Force also sends teams of inspectors to complete inspections, prepare and evaluate inspection reports and sampling data generated to determine which agency would best address violations (U.S. EPA, 1998).

12.0 Support

There are two inspectors for the Central Valley/Bay-Delta dairy farms, and currently resource limitations allow for only two staff persons to be assigned to the dairy program. The Bay-Delta also has staff assigned temporarily to develop enforcement cases. The Chino Basin is also limited to two inspectors (U.S. EPA, 1998).

The dairy industry reported that thousands of cows, heifers and calves died in the Chino Basin in February 1998 as a result of El Nino storms. The area was declared a federal and state disaster area. Aid received for flood control projects will impact this Dairy Preserve Area by decreasing the amount of wastewater currently discharged to the Santa Ana River during storms. California could potentially receive \$213.45 million in disaster relief from Congress with \$5 million from the disaster bill specifically for the Dairy Preserve. The Dairy Preserve could receive an additional \$5 million from the State of California, and a \$22,500 grant from EPA Region 9 (U.S. EPA, 1998).

13.0 Case Studies/Innovative Technology

A Study of the Hilmar area currently being conducted by the RWQCB may serve as an example of the extent of ground water contamination by nitrate in California's Merced County. The study indicates that within a 36 square miles area, about 60% of the 69 wells

sampled exceed the state MCL. These high nitrate levels are believed to be caused primarily by dairy waste (U.S. EPA, 1998).

Sonoma/Marin dairy operators utilize “range plans” to assure compliance with water quality control regulations (U.S. EPA, 1998). A local processor, Clover-Stornetta, offers incentives to dairies with approved range plans including a higher price for their milk and marketing of the milk as an “environmentally conscious product.” The product sells well.

In addition, CWA 319 grants are funding a demonstration project for advanced pond systems, and a collaborative approach to addressing horse operations waste management issues in the Bay area (U.S. EPA, 1998).

14.0 References

National Association of State Departments of Agriculture (NASDA). 1997. Summary Matrix of State Survey on Waste and Manure Management Regulations.

1996-97 California Permit Handbook. (No date). [Online]. California Office of Permit Assistance, California Trade and Commerce Agency. Available:
<http://commerce.ca.gov/business/permits/index.html> [1997, December 16].

Oda, Terry. U.S. Environmental Protection Agency, Region 9. Summary of state program information sent to Ruth Much (SAIC), Fall 1997.

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U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on

Concentrated Animal Feeding Operations (CAFOs). Results of June 1998 Survey of
States and Regions Compiled by G. Beatty, US. EPA, Office of Water, Washington,
D.C.

Background

There are approximately 450 CAFOs and 10,000 to 18,000 AFOs in Colorado (USEPA, 1998). Currently, Colorado is experiencing an influx of hog and dairy operations and large cattle feedlots. Since mid-1997, three bills related to CAFO management were presented to the state legislature. Although none were passed, the bills were an attempt to impose rigorous regulation of hog farms and create comprehensive permitting requirements (USEPA, 1998). The Colorado Water Control Commission revised the Confined Animal Feeding Operations Control Regulation (CAFR) effective August 1992. The regulation is intended to prevent the discharge of manure or wastewater from CAFOs into waters of the state and encourage the beneficial use of animal feedlot wastes on agricultural land. Concentrated animal feeding operations are required to operate as no discharge facilities (Walker). Also, a legislative ballot initiative was passed in the last election which requires rigorous regulations and permitting of housed commercial hog farms effective July 1, 1999.

1.0 Lead Regulatory Agency

The Colorado Department of Health, Water Quality Control Division administers the CAFR.

2.0 Lead Agency for Voluntary Programs

Colorado Department of Agriculture

3.0 Other State Agency Involvement

Unidentified.

4.0 State Regulations Regarding AFO

The provision of sections 24-4-203(4)25-8-202(7), 25-8-205, 25-8-206, and 25-8-308 C.R.S. provide the statutory authority for adoption of the 1992 Confined Animal Feeding Operations Control Regulation Revisions.

5.0 State Voluntary Programs

Animal feeding operations that are not defined as CAFOs have been prescribed best management practices (BMPs) by the Colorado Water Quality Control Commission. The BMPs were designed to reduce water quality impacts from small animal feeding operations (CAFR, 1992). These BMPs provide guidance on several aspects of manure management including practices to decrease open lot surface area, divert runoff from animal confinement areas, decrease water discharges and manure transport to state waterways, and protect groundwater.

6.0 Type of Permits

NPDES

Colorado is authorized to administer the NPDES permit program.

Other

Colorado's CAFR is a self-implemented control regulation. Thus, no permits are required or issued (NASDA, 1997).

7.0 Permit Coverage

Colorado has adopted the Federal definition of a CAFO and the intent of the Federal NPDES permitting program as it relates to manure management. The adopted revisions to Colorado's CAFR address two different categories of confined animal feeding operations: 1) concentrated animal feeding operations and, 2) other animal feeding operations.

Concentrated animal feeding operations are defined by Colorado as large capacity facilities in areas where the potential for impacts is severe. Facilities outside the Federal definition of a CAFO have been included in Colorado's CAFO definition to address potential impacts to groundwater. As such, facilities with less than 1,000 animal units are recognized to have potential to contaminate groundwater and public drinking water supplies. Thus, any feeding operation in a significant ground water recharge area or where drinking water withdrawals take place is considered a CAFO (CAFR, 1992).

Colorado's CAFR varies from the Federal CAFO definition for the species equivalent of horses, swine and sheep. Also, the CAFR allows the Division to designate AFOs as CAFOs on a case-by-case basis where adverse impacts to surface or groundwater quality is likely.

Approvals

Animal feeding operations in Colorado are not required to obtain a permit. However, the Colorado Water Quality Control Commission decided that planning is necessary to ensure that animal feeding operations meet the requirements set forth in the regulations. As such, the Water Quality Control Division determined that it needed to be informed of the existence and operation of CAFOs and requires new, expanded, and existing operations that are in significant noncompliance to submit a *Manure Process Wastewater Management Plan* (CAFR, 1992).

Lagoon Design and Specifications

Concentrated animal feeding operations are required to adopt specific manure and wastewater retention and disposal requirements. These requirements focus on proper design, construction, and operations to ensure proper disposal of animal feedlot waste and protection of ground and surface water. Several of these requirements are highlighted below.

- Structures that retain process-generated wastewater must be lined so as not to exceed a seepage rate of 1/32 inch per day.
- Structures that retain storm water from open animal feeding operations must be constructed and maintained so as not to exceed a seepage rate of 1/4 inch per day.

- Manure and process wastewater must be removed to prevent overflow from lagoons.

Discharge rules

No discharge allowed, except in the event of a 25-year, 24-hour storm event (USEPA, 1998; CAFR 1992).

Waste Management Plans

Concentrated animal feeding operations that are new, reactivated, reconstructed or expanded must submit a *Manure Process Wastewater Management Plan* to the Colorado Water Quality Control Division. Existing operations in noncompliance must also submit a manure management plan to the Division. The plan does not require an official review or approval by the Water Quality Control Division unless the land application plan requires site specific analyses.

Land Application Requirements

Land application of manure and process wastewater must be based on agronomic rates, as determined by one of the following three methods.

1. If no supplemental or commercial fertilizers are used other than the manure application, operators do not have to conduct site specific agronomic analyses.

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Rather, operators may use preestablished conditions to determine application rates based on standards developed and maintained by Water Quality Control Division.

This method is considered conservative and most protective of the environment. The CAFR establishes table values for the conservative approach to nutrient application.

2. Operators may select to conduct a site-specific agronomic analysis based on the nutrient needs of crops in a growing season. This method may allow for application at rates greater than allowed under the first method.
3. Land applications in excess of agronomic rates may be approved if an operator chooses to undertake a comprehensive site specific study that would account for nutrient losses besides plant uptake (such as volatilization and denitrification). Monitoring requirements may be required if this method for determining land application is adopted.

Separation distances

There are no state standards regarding separation distances from dwellings or property lines that CAFOs must follow. Separation requirements from property lines are dictated by local zoning ordinances. Colorado does require a 150 foot distance between AFOs and water wells (NASDA, 1997).

Monitoring Requirements

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Monitoring requirements are determined on a case-by-case basis and will be required of facilities where the potential for violations poses a significant risk to water quality.

9.0 Number of AFO/CAFO facilities permitted

One individual NPDES permit has been issued in Colorado. That permit is now expired (USEPA Permit Compliance System - 8/97).

10.0 Enforcement

Unidentified.

11.0 Inspection

The Division has committed to doing 20 CAFO inspections in FY '99 based on size and species.

12.0 Support

The Division has 0.75 FTE committed to Colorado's CAFO program for FY '99.

13.0 Case Studies/Innovative Programs

Unidentified.

14.0 References

Confined Animal Feeding Operations Control Regulation (CAFR). 1992. Colorado Department of Health Water Quality Control Commission.

National Association of State Departments of Agriculture (NASDA). 1997. Summary Matrix of State Survey on Waste & Manure Management Regulations.

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions Compiled by G. Beatty, EPA, Office of Water, Washington, D.C.

Walker, L. No date. Colorado Confined Animal Feeding Regulations: Who Must Comply. Agricultural Engineering Technical Brief. Cooperative Extension Colorado State University, Fort Collins, Colorado.

1.0 Lead Regulatory Agency

Connecticut Department of Environmental Protection (DEP) administers a regulatory program that addresses waste management issues associated with agricultural operations (Voorhees, Region 1, pers. com., 1997).

2.0 Lead Agency for Voluntary Programs

Connecticut DEP and the Connecticut Extension Service help farmers to voluntarily reduce and prevent pollution of state waters by agricultural wastes (NASDA, 1997; Voorhees, Region 1, pers. com., 1997).

3.0 Other State Agency Involvement

Connecticut DEP works with technical service agencies to help farmers develop and implement an "Agricultural Waste Management Plan." Connecticut DEP and Connecticut Extension Service are working with Natural Resources Conservation Service (NRCS) to develop requirements for operations to prevent discharge as a result of a 25-year 24-hour storm event. They are leaning toward a zero discharge policy (Voorhees, Region 1, pers. com., 1997).

4.0 State Regulations Regarding CAFOs

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Connecticut CAFOs are exempt from air quality regulations if they are following best management practices) BMPs. Any activities on wetlands must follow state and/or federal regulations.

5.0 Voluntary Programs

Connecticut DEP encourages agricultural operators to voluntarily comply with waste management regulations by developing and maintaining farm risk management plans (RMPs) and BMPs. NRCS or the University of Connecticut Extension Service are available to help operators design their plan (Voorhees, Region 1, pers. com., 1997).

CAFOs may be eligible for Environmental Quality Incentives Program (EQIP) funding and State Environmental Assistance Funding. Available cost-share funds are limited (NASDA, 1997).

6.0 Types of Permits

NPDES

Connecticut is approved to issue Federal NPDES permits. However, Connecticut does not have a definition of CAFOs equivalent to EPA's. There are currently no animal unit thresholds or permitting mechanisms in place to address discharges. Facilities are regulated on a case-by-case basis. Connecticut DEP supports issuing a general discharge permit to AFOs/CAFOs, but have met with resistance from the agricultural community (Voorhees, Region 1, pers. com., 1997).

Other

The state issues individual agricultural permits to problem facilities. The type of permit issued depends on local requirements. Permits are also required for new facilities and structures (NASDA, 1997).

7.0 Permit Coverage

Unidentified.

8.0 Permit Conditions

Approvals

Approvals are required for new, small operations. New operations are required to have a site appraisal before construction.

Lagoon Design and Specifications

Facilities are required to follow design standards if they are permitted and/or receiving cost-share assistance. Certain requirements are placed on waste storage structures:

- State and federal approval must be obtained.

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- Structures must be 2-4 feet from groundwater sources.
- Liners for waste lagoons should follow NRCS specifications, but clay liner is optional with state approval.
- Storage structure capacity must meet NRCS standards.
- Lagoon seepage limits are to be based on state or Federal requirements (NASDA, 1997).

Discharge Rules

NRCS, DEP and CT Extension are cooperating to develop requirements for operations to contain the 25-year, 24-hour storm event. They are leaning toward zero discharge.

Waste Management Plans

Animal Waste Management Plans (AWMP) address manure, contaminated storm water runoff from feeding areas, process waters, and silage leachate. Most AWMPs are applied to dairy operations that do not meet the Federal definition of a CAFO. Requirements are placed on facilities on a case-by-case basis (Voorhees, Region 1, pers. com., 1997).

Separation Distances

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Separation distances between facilities and dwellings, property lines and water wells are determined on a case-by-case basis with locality and the type of structure being factors. Distance from the bottom of a waste structure to ground water is 2-4 feet and subject to state and/or Federal approval (NASDA, 1997).

Land Application Requirements

It is recommended that facilities follow resource management plans and BMPs when applying wastes to land. Local notification must be given for diversion of any amount (NASDA, 1997).

9.0 Number of CAFO Facilities Permitted

No NPDES permits have been issued to CAFOs.

10.0 Enforcement

Unidentified.

11.0 Inspection Programs

State and/or Federal compliance visits are required. Violators are also identified through complaints (NASDA, 1997).

12.0 Support

Unidentified.

13.0 Case Studies/Innovative Programs

Unidentified.

14.0 References

National Association of State Departments of Agriculture (NASDA). 1997. Summary Matrix of State Survey on Waste and Manure Management Regulations.

Voorhees, Jeanne. U. S. Environmental Protection Agency, Region 1. Summary of state program information sent to Ruth Much (SAIC), Fall 1997.

1.0 Lead Regulatory Agency

Delaware Department of Natural Resources (DNR) administers regulatory programs related to CAFOs.

2.0 Lead Agency for Voluntary Programs

Unidentified.

3.0 Other State Agency Involvement

Delaware DNR works with its State Department of Agriculture (Letzkus, Region 3, pers. com., 1997).

4.0 State Regulations Regarding CAFOs

CAFOs must follow state and Federal regulations regarding air quality. The state of Delaware encourages the use of best management practices in regard to manure management. Guidance on the management of manure can be found in the final regulations under Policies and Procedures for Land Treatment of Wastes, Part IV (Land Treatment), Subpart A. [Subpart B has been reserved while the state conducts further research on animal waste management alternatives.]

5.0 State Voluntary Programs

Voluntary programs are available to encourage Delaware farmers to implement BMPs. The state has programs that address nutrient management, manure application, storage, and lagoon design. [These programs were unidentified.] Incentives for CAFOs include state and Federal cost-share programs, incentive funds, and low interest loans (NASDA, 1997).

6.0 Types of Permits

NPDES

Delaware is delegated to issue NPDES permits (Letzkus, Region 3, pers. com., 1997).

Other

Permits are required for manure storage ponds or structures that hold more than 40,000 gallons. Delaware requires state permits for any activity on wetlands (NASDA, 1997).

7.0 Permit Coverage

Federal animal unit thresholds apply.

Approvals

The state has no site approval requirements (NASDA, 1997).

Lagoon Design and Specifications

The state does not have specific design requirements for waste structures (though facilities may need to follow applicable NRCS guidelines). There are no state standards for storage capacity of waste structures or the kind of materials used to line the structures. There is a maximum seepage limit of 1 inch/year or 10^{-7} cm/sec (NASDA, 1997).

Discharge Rules

Unidentified.

Waste Management Plans

Unidentified.

Separation Distances

There are no specific requirements for waste structures pertaining to separation distance from dwellings or property lines, though state regulations require a distance to water wells

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of at least 100 feet. Distance from the bottom of the a waste structure to ground water is determined on a site-specific basis (NASDA, 1997).

Land Application Requirements

Unidentified.

9.0 Number of CAFO Facilities Permitted

No NPDES permits have been issued to CAFOs.

10.0 Enforcement

Unidentified.

11.0 Inspection Programs

There are no routine on-site inspections, though periodic inspections may occur (NASDA, 1997).

12.0 Support

Unidentified.

13.0 Case Studies/Innovative Programs

Unidentified.

14.0 References

Letzkus, Mary. U. S. Environmental Protection Agency, Region 3. Summary of state program information sent to Ruth Much (SAIC), Fall 1997.

National Association of State Departments of Agriculture (NASDA). 1997. Summary Matrix of State Survey on Waste and Manure Management Regulations.

1.0 Lead Regulatory Agency

Florida Department of Environmental Protection

2.0 Lead Agency for Voluntary Programs

Florida Department of Environmental Protection

3.0 Other State Agency Involvement

Florida Department of Agriculture and Consumer Services, Institute of Food and Agricultural Services, and the Water Management Districts

4.0 State Regulations Regarding CAFOs

Discharges to surface waters are regulated under Chapter 62-670, Florida Administrative Code (F.A.C.), which is essentially identical to 40 CFR 122.23 except that all CAFO determinations for facilities with 1,000 or fewer animal units require a case-by-case designation. The 40 CFR 412 effluent limitations are adopted in Chapter 62-660, F.A.C.

5.0 State Voluntary Programs

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A voluntary, incentive-based program is underway in the Suwannee River Basin to reduce nutrient loadings to surface and ground waters from animal feeding operations, fertilizer use, septic tanks, and other sources.

6.0 Types of Permits

NPDES

Florida is authorized to issue Federal NPDES permits.

Other

The state of Florida has its own CAFO permitting rules that follow the Federal regulations. State permits require zero discharge. State law authorizes a construction and operation permit. Wastewater permits are effective for up to 5 years.

Permits are required for all dairies in the Lake Okeechobee Drainage Basin under a rule specific to those dairies. Permits are also required under a specific rule for poultry operations with liquid manure systems or that spray irrigate egg wash wastewater. Permits are not required for layer or broiler dry systems (U.S. EPA, 1998).

Permitting requirements for animal waste management systems that threaten to violate ground water quality standards are authorized under Chapter 62-522, F.A.C.

7.0 Permit Coverage

The primary (1,000 animal unit) Federal threshold applies to CAFOs statewide. Similar to Federal rules, Florida regulations provide that operations below the animal unit threshold may be designated CAFOs on a case-by-case basis if the facility discharges pollutants into surface waters of the state directly or through a man-made conveyance. Florida's definition of CAFO (Chapter 62-670.200) also specifies that animal feeding operations that contain process wastewater and runoff during the 25-year, 24-hour storm event are not considered CAFOs by the state regardless of the number of animals at the facility.

8.0 Permit Conditions

Approval

Florida Department of Environmental Protection

Lagoon Design and Specifications

Lagoons are to be designed with a professional engineer or with the NRCS. Most new lagoons must be lined. (Jones and Sutton, 1996).

Discharge Rules

No discharge is allowed except in accordance with federal effluent guidelines.

Waste Management Plans

Permits require comprehensive waste management plans.

Separation Distances

State permits have buffer/setback requirements in addition the Federal requirements.

Land Application Requirements

Manure must be applied at agronomic rates with verification monitoring of manure nutrient application rates and nutrient removal by crops.

Other Requirements

Quarterly groundwater monitoring is required to assure compliance with state ground water quality standards.

9.0 Number of CAFO Facilities Permitted

There are currently fifty state permits for AFOs (primarily dairies) and no NPDES permits.

10.0 Enforcement

Permitted AFOs are inspected at least annually and enforcement is taken for noncompliance. Unpermitted AFOs are inspected in response to complaints and violations are resolved through normal enforcement procedures.

11.0 Inspection Programs

Annual inspections and reporting are required for permitted facilities. Under Florida's recently developed CAFO Compliance Assurance Plan, unpermitted AFOs that exceed 300 animal units and all dairies will be inspected by the year 2004, beginning with inspections of all 1,000 animal unit dairies in 1999. Poultry operations with dry manure systems will not be inspected under this plan.

12.0 Support

Florida has approximately 12 staff (3 FTEs) distributed among the six regional offices involved in CAFO compliance and enforcement activities. In addition, two FDEP headquarters staff (equal to 1.6 FTEs) are devoted to implementing the EPA AFO/CAFO plan. The Section 319(h) grant program supports investigations of water quality impacts from AFO waste management practices and development of BMPs to reduce surface and ground water quality impacts (U.S. EPA, 1998).

13.0 Case Studies/Innovative Programs

A list of 319 projects which include demonstration designs is available upon request.

14.0 References

Jones, Don. D and A. L. Sutton. 1996. U. S. Animal Manure Management Regulations: A Review and a Look at What's Coming. Presented at the conference "Getting the Most from your Manure Resource: Managing your On-Farm Waste System," Portage la Prairie, Manitoba, Canada.

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions Compiled by G. Beatty, US. EPA, Office of Water, Washington, D.C.

1.0 Lead Regulatory Agency

The Environmental Protection Division of the Department of Natural Resources administers the rules and regulations of the Water Control Act, including the NPDES program and the land disposal permitting program.

2.0 Lead Agency for Voluntary Programs

Unidentified.

3.0 Other State Agency Involvement

Georgia Pollution Prevention Assistance Department works to prevent pollution from all types of industry.

4.0 State Regulations Regarding AFO

Georgia Water Quality Control Act defines Georgia's rules and regulations governing ground and surface water. A "bad actor" bill allows the Environmental Protection Division to deny permits to operators with poor compliance records in or out of the state (USEPA, 1998).

5.0 State Voluntary Programs

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Georgia Pollution Prevention Assistance Department allocated a budget to establish the Agricultural Pollution Prevention Program in cooperation with The University of Georgia's Biological and Agricultural Engineering Department in 1994. The goal of the program is to encourage the agricultural community to practice voluntary pollution prevention. The program provides technical assistance and information on pollution prevention practices including site selection, facility layout, and individual pollution prevention site assessments.

6.0 Type of Permits

NPDES

Georgia is authorized to administer the Federal NPDES Program. Animal feeding operations in the State of Georgia are all required to be no-discharge systems, and NPDES permits are not issued.

Other

Depending on the size and type of operation, an animal feeding operation may be required to obtain a land application system (LAS) permit.

7.0 Permit Coverage

Georgia defines a CAFO as any point source that meets the criteria set forth in Federal regulations (NASDA Research Foundation, 1997). Permits are required for large, new, or expanding operations (NASDA, 1997).

A land disposal system permit is issued to any facility that disposes of pollutants by applying the waste to the surface or beneath the surface of the land. This includes land disposal systems that use vegetation to remove some pollutants. If the land disposal system employs overland flow, subsurface drain, or other techniques that result in a discharge into surface waters, the operator must obtain coverage under an NPDES permit instead of a land disposal system permit (NASDA Research Foundation, 1997).

8.0 Permit Conditions

Approvals

A site appraisal is required before development and facilities must be designed according to Natural Resource Conservation Service (NRCS) standards (NASDA, 1997).

Lagoon Design and Specifications

Waste treatment systems should be designed following NRCS standards. More specifically, lagoon seepage is limited to 1/8 inch per day and the freeboard must be maintained at two feet (NASDA, 1997).

Separation Distances

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A minimum of 300 feet must exist between a habitable structure and CAFO. Neighboring property lines must be 150 feet from the waste treatment facility (NASDA, 1997; NASDA Research Foundation, 1997).

Waste Management Plans

Consistent with NRCS guidelines.

Land Application Requirements

The LAS permits require slow rate spray irrigation at agronomic rates, no discharge to surface water, ground water monitoring, no exceedence of drinking water maximum contamination levels in ground water, soil monitoring, buffer zones, and quarterly reporting. Systems must be built and operated according to NRCS criteria. In general, all NRCS guidelines, such as avoiding waste application to land that is subject to flooding, adjacent to water bodies, or steeply sloping, are to be followed.

9.0 Number of AFO/CAFO facilities permitted

There are 13 CAFO state individual land application system permits (LAS) (USEPA, 1998).

10.0 Enforcement

Handled primarily by 5 EPD regional offices

11.0 Inspection Programs

No routine inspections at unpermitted facilities

12.0 Support

Georgia has not dedicated staff to AFO/CAFO issues, but approximately 0.5 FTE from regional offices is used to respond to complaints (USEPA, 1998).

13.0 Case Studies/Innovative Programs

The “One Plan” initiative was developed as a program neutral (i.e., did not specify agency programs or sources of financial or technical assistance) attempt to address agricultural pollution problems in the Upper Oconee Basin. The One Plan initiative was developed with input from a diverse group of stakeholders from the Upper Oconee Basin. This initiative integrates technical assistance with a coordinated site-specific planning process. The initiative is formalized into a single resource management plan that addresses agricultural production, and other resource objectives, and meets legal and programmatic requirements. Two farms were selected as pilot operation sites to carry out the planning process (NASDA Newsletter Winter, 1997).

14.0 References

Linville, I. U.S. Environmental Protection Agency, Region 4. Summary of state program information sent to Ruth Much (SAIC), Fall 1997.

The NASDA Research Foundation Newsletter. 1997. Winter.

National Association of State Departments of Agriculture (NASDA). 1997. Summary Matrix of State Survey on Waste & Manure Management Regulations.

National Association of State Departments of Agriculture (NASDA) Research Foundation. 1997. Environmental Laws Affecting Georgia Agriculture.

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions Compiled by G. Beatty, EPA, Office of Water, Washington, D.C.

U.S. Environmental Protection Agency. 1993. The Report of the EPA/State Feedlot Workgroup. Office of Wastewater Enforcement and Compliance, Washington, D.C.

Background

The State of Hawaii has 30-40 dairy operations, more than 1,000 swine operations (only 5 could be considered CAFOs), 20-30 poultry operations and 50-60 cattle operations. Hawaii's Section 305(b) and Section 303(d) reports do not mention animal waste problems (U.S. EPA, 1998).

1.0 Lead Regulatory Agency

State oversight of CAFO issues is complaint driven. Hawaii Department of Health, Wastewater Branch prepared Guidelines for Livestock Waste Management in July 1996 (U.S. EPA, 1998).

2.0 Lead Agency for Voluntary Programs

Unidentified.

3.0 Other State Agency Involvement

Unidentified.

4.0 State Regulations Regarding CAFOs

Unidentified.

5.0 State Voluntary Programs

Unidentified.

6.0 Types of Permits

NPDES

Hawaii is authorized to administer the NPDES program.

Other

Unidentified.

7.0 Permit Coverage

Unidentified.

8.0 Permit Conditions

Approvals

Unidentified.

Unidentified.

Discharge Rules

Unidentified.

Waste Management Plans

Unidentified.

Separation Distances

Unidentified.

Land Application Requirements

Unidentified.

9.0 Number of CAFO Facilities Permitted

One individual NPDES permit was issued that has since expired (EPA Permit Compliance System -8/97).

10.0 Enforcement

Unidentified.

11.0 Inspection Programs

Unidentified.

12.0 Support

No staff person has been assigned to work with the state water quality agency to develop a CAFO strategy (U.S. EPA, 1998).

13.0 Case Studies/Innovative Programs

Unidentified.

14.0 References

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions Compiled by G. Beatty, US. EPA, Office of Water, Washington, D.C.

U.S. Environmental Protection Agency Permit Compliance System. August, 1997.

Background

Iowa has traditionally been the U.S. leader in hog production. The Iowa Department of Natural Resources (IDNR) has had a livestock permitting program since 1972, and has administered the NPDES program since 1978 (USEPA, 1998).

1.0 Lead Regulatory Agency

The Wastewater Section of Iowa's Department of Natural Resources (IDNR), Environmental Protection Division issues permits for wastewater reclamation and nondischarging animal feeding operations. The Wastewater Section also issues discharge or operation permits under delegation of the federal NPDES permit program.

2.0 Lead Agency for Voluntary Programs

Unidentified.

3.0 Other State Agency Involvement

Unidentified.

4.0 State Regulations Regarding AFO

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Pursuant to the authority of Iowa Code section 455B.173(12); 1995 Iowa Acts, Chapter 195, section 37; and 1997 Iowa Acts, S.F. 473, section 12, the Iowa Environmental Protection Commission adopted Chapter 65, “*Animal Feeding Operations*,” to address waste disposal and design of waste disposal systems for animal feeding operations. Chapter 65 provides detailed guidance on the requirements AFOs must follow when submitting applications and operating waste control systems.

Iowa’s “*manure law*,” passed in 1995 as the Livestock Regulation Act (House File 519), prohibits the discharge of manure directly into a water of the state or into a drain or drainage ditch that discharges directly to state waters. As such, confined feeding operations must retain all manure produced between periods of disposal and dispose of manure so as not to cause ground or surface water pollution. The “*manure law*” addressed four major components that affect livestock operations including 1) financial assurance for closures, 2) air quality (i.e., separation distances), 3) water quality, and 4) nuisance defense.

5.0 State Voluntary Programs

Unidentified.

6.0 Type of Permits

NPDES

Iowa is an NPDES delegated state and has authority to issue individual NPDES permits.

Iowa Environmental Protection Division requires livestock facilities (i.e., open feedlots and confinement feeding operations) that use waste control systems to obtain operating permits and construction permits. An operating permit, rather than a NPDES permit, maybe required for those facilities that land apply wastes (Iowa DNR Environmental Protection Division, 1997).

7.0 Permit Coverage

7.1 Open Feedlot Requirements

Iowa Department of Natural Resources defines open feedlots as unroofed or partially roofed animal feeding operations in which no crop, vegetation, or forage growth is maintained during the period that animals are confined. These operations must obtain operating permits under the following conditions:

1. An open feedlot with a capacity that exceeds 1,000 beef cattle; 700 dairy cattle; 2,500 butcher and breeding swine; 10,000 sheep and lambs; 55,000 turkeys; 500 horses; or 1,000 total animal units.
2. An open feedlot that discharges wastes directly into water of the state or through a manmade conveyance and the feedlot's capacity exceeds 300 beef cattle; 200 dairy cattle; 750 butcher and breeding swine; 3,000 sheep and lambs; 16,500 turkeys; 30,000 broiler or layer chickens; 150 horses; or 300 total animal units.

3. Any open feedlot that the Department of Natural Resources determines is in need of an operating permit following a site inspection.

Construction Permits

Construction permits are required for any new facility that falls under the requirements of an operating permit.

7.2 Confinement Feeding Operations

Confinement feeding operations, defined as totally roofed animal feeding operations that store or remove waste as a liquid or semi-liquid, must collect and store all wastes between periods of disposal and dispose of stored wastes by land application. Direct discharges from feeding operations are prohibited and all wastes removed from a confinement feeding operation must be disposed of in a manner that does not cause surface or groundwater pollution. In general, confinement feeding operations do not require an operating permit unless specifically requested by the Department of Natural Resources (Iowa DNR, 1992).

Construction Permits

Construction permits are required for confinement feeding operations based on a combination of factors related to size (i.e., capacity) of the operation and type of waste control system used. Small facilities do not need a permit to be built. The requirements for construction permits are listed below.

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Construction permits are required for confinement feeding operations using an *anaerobic lagoon* or *earthen manure storage basin* if the facility is designed for an animal weight capacity greater than:

1. 400,000 pounds of bovine, or
2. 200,000 pounds for other species.

Construction permits are required for confinement feeding operations using *formed manure storage structures (i.e., tanks made of concrete, wood, or steel)* if the facility is designed for an animal weight capacity greater than:

1. 1,600,000 pounds of bovine, or
2. 625,000 pounds for other species.

Construction permits are required for confinement feeding operations that store manure in *dry form* if the facility is designed for an animal weight capacity greater than:

1. 4,000,000 pounds of bovine, or
2. 1,250,000 pounds for other species.

Also, animal feeding operations that use an egg wastewater structure must obtain a construction permit if the animal weight capacity exceeds 200,000 pounds.

Water Withdrawal

If an operation withdraws more than 25,000 gallons a day, the facility must apply for a water withdrawal permit.

8.0 Permit Conditions

Approvals

Approval is required for construction and operation of animal feeding operations based on the capacity of the facility. An individual NPDES permit may also be required if the facility is considered a CAFO.

Lagoon Design and Specifications

Iowa requires that lagoons and earthen waste storage basins be constructed to prevent seepage from exceeding 1/16 inch per day and that freeboard capacity be maintained at 2 feet (NASDA, 1997) Soil borings are required prior to constructing waste lagoons.

Although monitoring is not routinely required, Iowa Division of Environmental Protection can require case-by-case monitoring for sites considered to have potential for polluting ground water.

Discharge Rules

All open feedlot facilities are prohibited from direct discharges and must control discharges from precipitation up to the largest 25-year, 24-hour storm event (Iowa DNR, 1992).

Iowa law requires manure management plans be submitted to the Department of Natural Resources for all newly permitted facilities and facilities with construction permits issued after May 1995. The manure management plans are to address how manure management will reduce impacts to state waters. The plan must include land application rates based on nitrogen needs of crops being grown, identify the land areas where manure will be applied, and detail application methods and timing. Although waste applications are meant to be at agronomic rates, Iowa allows higher rates if land available for waste disposal is limited (Agena, 1994).

Manure management plans must be kept on-site and available for inspection by Iowa officials. Inspection records must be maintained and methods for manure application/disposal must be identified (ASIWPCA, 1997).

Separation Distances

Separation distances have been established between proposed confined animal feeding operations and neighboring residences, churches, schools, business, and public use areas. Separation distances also exist for wells, sinkholes, lakes, rivers, and streams. These distance requirements vary with size of the operation, type of animal raised, and type of manure storage facility used. Separation distances for large swine and bovine operations are not less than 1,250 feet and can be up to 2,500 feet from buildings within incorporated areas, public use areas, churches, schools, and businesses in unincorporated areas. A 500-foot separation distance is required from surface intakes, sinkholes and agricultural

drainage wells, and there is a 200-foot requirement from navigable lakes, rivers, and streams. Small feeding operations that do not require permitting may still have to abide by separation requirements (Iowa DNR Environmental Protection Division, 1997).

Land Application Requirements

Land application is not recommended on frozen or snow-covered ground unless absolutely needed and should be restricted to areas with 4 percent slopes or less. If wastes are disposed of on land subject to flooding (i.e., within the 10-year floodplain) the manure should be incorporated into the soil (Iowa DNR, 1992). Before land application is allowed, the waste management plan must show sufficient land is available for manure application so as not to exceed nitrogen requirements of crops (ASIWPCA, 1997).

Self-Monitoring Requirements

Self-monitoring requirements may be imposed on AFOs in any operation permit. These requirements could require operators to measure liquid level on periodic basis and sample and analyze groundwater to determine effects of wastewater application.

9.0 Number of AFO/CAFO facilities permitted

Muehling (1991) reported that Iowa had issued 15 NPDES permits to CAFOs. According to the EPA Permit Compliance System (8/97), 14 individual NPDES permits have been issued to CAFOs, all of which have expired. Most of the individual NPDES permits have been issued to open beef lots (USEPA, 1998). Over 600 construction permits, for both

open and confinement facilities, have been issued after review and approval or manure management plans (USEPA, 1998).

10.0 Enforcement

IDNR took 54 enforcement actions against feedlots during 1996 and 1997. Fines levied from these actions totaled \$115,700 (USEPA, 1998).

11.0 Inspection Programs

Feedlot inspection and enforcement is a priority for IDNR in FY 1998. IDNR completed 400 AFO inspections and 91 site surveys in 1996. In 1997, IDNR completed 700 inspections and 66 site surveys (USEPA, 1998).

12.0 Support

In 1994, program staffing devoted to state animal waste control programs was 2.25 FTEs (Agena, 1994). Currently, there are 18 FTE working with CAFO (USEPA, 1998).

13.0 Case Studies/Innovative Programs

Iowa law (1995 Livestock Regulation Act, House File 519) created the Manure Storage Indemnity Fund to assist with site cleanups at abandoned confinement feeding operations under county control. The fund provides money to cleanup abandoned sites when other funding sources are not available. Money for the fund comes from fines collected by the

Iowa Department of Natural Resources from confined feeding operations and a one-time fee associated with construction of a confined feeding operation.

14.0 References

Agena, Ubbo. 1994. Animal Waste Control Programs of Iowa and Eight Other States. Iowa Department of Natural Resources, Environmental Protection Division.

Association of State and Interstate Water Pollution Control Administrators (ASIWPCA). 1997. CAFO Standards for Pork Production, Survey. December 1997. ASIWPCA Washington, D.C.

Iowa Department of Natural Resources. 1992. Environmental Regulations and Guidelines for Animal Feeding Operations in Iowa.

Iowa Department of Natural Resources Environmental Protection Division. [Online]. Water Quality Wastewater Section: Confinement Feeding Operations. Available: <http://www.state.ia.us/government/dnr/organiza/epd/wastewtr/.htm> [November 6, 1997].

Muehling, A. J. 1991. Livestock Environmental Regulations: Inequity Among Midwestern States? (*In*) The Livestock Industry and the Environment Conference Proceedings. October 31 - November 1, 1991. Iowa State University, Ames, Iowa.

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National Association of State Departments of Agriculture (NASDA). 1997. Summary

Matrix of State Survey on Waste & Manure Management Regulations.

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on

Concentrated Animal Feeding Operations (CAFOs). Results of June 1998 Survey of

States and Regions Compiled by G. Beatty, EPA, Office of Water, Washington, D.C.

Background

In 1997, there were 1,050 dairies and 270,000 mature dairy cows in Idaho. Most of these operations are in the Snake River Plain. Idaho agricultural statistics from 1996 show that the state had 45 feedlots with 617,000 head of cattle. In 1995, there were approximately 16,000 head of sheep and lamb, 45,000 hogs and pigs, and 1,000,000 birds in commercial poultry operations (Palmer, 1993). The potential for groundwater impacts from CAFOs are a concern to the public. Land application of solids and liquids and leaking waste lagoons are considered to be sources of groundwater contamination (USEPA, 1998).

1.0 Lead Regulatory Agency

The Idaho Department of Environmental Quality (IDEQ) reviews all plans and specifications for all new or modified waste treatment disposal facilities before construction. As explained below, Idaho Code requires the Department of Agriculture, instead of IDEQ, to approve dairy waste systems.

Idaho State Department of Agriculture (ISDA) administers the rules governing dairy waste as set forth in the *1995 Idaho Dairy Pollution Prevention Initiative Memorandum of Understanding* (MOU). This MOU gives ISDA the responsibility for promulgating and enforcing rules to carry out the MOU, including developing dairy waste inspection protocols, conducting periodic inspections to ensure compliance with the Clean Water Act (CWA) and Idaho Water Quality Standards, reporting releases to U.S. waters, and

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approving the design and construction of dairy waste management systems as required in the *Idaho Waste Management Guidelines for Confined Feeding Operations*.

2.0 Lead Agency for Voluntary Programs

The Idaho Department of Environmental Quality provides training and technical assistance to the Idaho State Department of Agriculture and individual dairies upon request.

3.0 Other State Agency Involvement

Idaho Department of Health and Welfare's Division of Environmental Quality, Idaho State Department of Agriculture, Idaho Dairymen's Association, and the U.S. Environmental Protection Agency are party to the MOU.

4.0 State Regulations Regarding AFO

The Idaho Water Quality Standards and Wastewater Treatment Requirements (Title 1, Chapter 2) regulates confined feeding operations and land treatment of solid and liquid dairy waste as it relates to protecting state waters (Palmer, 1993).

The Idaho Ground Water Quality Rule (IDAPA 16, Title 1, Chapter 11) regulates confined feeding operations and land treatment of solid and liquid dairy waste as it relates to protecting ground water (Palmer, 1993).

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Idaho Dairy Law (Title 37, Chapter 4) regulates confined feeding operations as they apply to waste management and sanitation of Grade A dairy products.

Rules of the Department of Agriculture Governing Dairy Waste (IDAPA 02, Title 04, Chapter 14) govern the design, function, and management practices of dairy waste systems.

5.0 State Voluntary Programs

Unidentified.

6.0 Type of Permits

NPDES

Idaho is not authorized to issue NPDES permits. Therefore, animal feeding operations that qualify under Federal CAFO regulations are covered under EPA's Region 10 general NPDES permit (NASDA, 1997).

Other

Idaho issues state permits to dairy farms that cover both environmental quality and food safety under the terms of a MOU between state and Federal regulators and the Idaho Dairymen's Association. Idaho dairy farms must have Grade A or B milk permits, and all dairy farm's waste systems are linked to these permits (NASDA, 1997). No milk

producer can sell milk unless the dairy farm has a Grade A permit, which requires dairy farm operators to install and use dairy waste systems consistent with the *Idaho Waste Management Guidelines for Confined Feeding Operations*.

7.0 Permit Coverage

All livestock operations are covered by NPDES regulations as regulated by EPA.

All dairy farms with one or more milking cows, sheep, or goats must have a state issued Grade A or B permit that qualifies the producer to sell milk.

8.0 Permit Conditions

Approvals

The Idaho Department of Agriculture is authorized to approve the design and location of dairy waste systems and these systems must conform to standards described in *Idaho Waste Management Guidelines for Confined Feeding Operations*. Routine on-site inspections are required for dairy operations but not for other livestock facilities.

Lagoon Design/Specifications

Lagoon seepage limits cannot exceed 1/8 inch per day for newly constructed lagoons (NASDA, 1997).

Discharge Rules

Permitted CAFOs can discharge wastewater under certain precipitation conditions if collection and storage facilities are designed, operated, and maintained to contain all wastewater and contaminated runoff from a 25-year, 24-hour rainfall event, and all runoff from accumulation of winter precipitation (assume a minimum of three inches) based on precipitation values of a one in five-year winter (USEPA, 1998; Palmer, 1993). CAFOs cannot discharge into wetlands.

Waste Management Plans

Livestock waste management plans, either submitted to the Idaho Department of Environmental Quality or Idaho Department of Agriculture should include:

- A description of equipment and structures used to collect, transport, store, and apply animal wastewater, including storage volume and time;
- Schedules for emptying and applying wastes;
- Schedules, rates, and locations for application of wastes; and
- Written agreements with other landowners to accept liquid wastes.

Separation distances

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The state recommends a 300-foot separation distance to dwellings and property lines.

Some counties have separation distance requirements of up to 0.5 mile. The state prefers a 1,000 foot minimum separation distance to public water supplies. Storage lagoons should be 100 feet from streams and public water wells (Palmer, 1993).

No direct contact is allowed between animals from a CAFO and waters of the United States.

Dead animals must be buried six feet deep with lime and at least 100 feet away from waterways.

Land application requirements

Waste must be applied at agronomic rates. ISDA is working to pilot projects for land application plans. ISDA's goal is to have a land application plan on every Idaho dairy farm within the next 2 years (USEPA, 1998).

9.0 Number of AFO/CAFO facilities permitted

Ten facilities have sought coverage under the NPDES general CAFO permit for Idaho; five facilities have been issued coverage to date (USEPA, 1998).

Approximately 1,000 dairies are covered under the Grade A permit to sell milk (USEPA, 1998).

10.0 Enforcement

Authority

The IDEQ can initiate enforcement actions under the authority of the Idaho Environmental Protection and Health Act only upon request by the ISDA.

Tools

Informal compliance schedules may be developed for facilities with discharge violations, however, formal compliance schedules are developed when 1) corrective actions cannot be completed within 30 days, 2) when corrective actions require significant capital investment, and 3) when operators have not complied with informal schedules. Violations that are not corrected can result in suspension or loss of a producer's permit to sell milk.

11.0 Inspection Programs

Each dairy farm is inspected at least annually or at intervals sufficient to determine that dairy waste is managed appropriately. Inspections of dairy waste management systems are conducted during routine sanitation inspections. An official inspection report is required as described in the *Idaho Waste Management Guidelines for Confined Feeding Operations* (USEPA, 1998).

Non-dairy livestock operations are inspected on a complaint driven basis (NASDA, 1997). Every other year for the past 4 years EPA and IDEQ have jointly inspected 40 to 60

facilities during a one week “inspection blitz”(USEPA, 1998; NASDA, 1997). IDEQ expects to conduct 75 inspection this year (USEPA, 1998).

The IDEQ and EPA discontinued compliance inspections of dairy operations consistent with the terms of the MOU.

12.0 Support

ISDA has 4 FTEs. These employees are involved in inspections, waste system design and review, and land application planning (USEPA, 1998). The total number of staff dedicated to CAFO at IDEQ was unidentified.

13.0 Case Studies/Innovative Programs

The *Idaho Dairy Pollution Prevention Initiative Memorandum of Understanding* (MOU) was developed by the Idaho Dairymen’s Association, Idaho State Department of Agriculture, U.S. Environmental Protection Agency, and IDEQ. The MOU was established with the recognition that a formalized and efficient effort were needed to ensure that Idaho dairymen comply with the Clean Water Act and Idaho Water Quality Standards and Wastewater Treatment Standards. To prevent duplicate inspection services, the agreement recognized ISDA as the lead agency for dairy waste inspections.

The Idaho State Department of Agriculture works with the dairy association to promote producers that are outstanding waste system managers by awarding the “Dairy of Merit” award.

14.0 References

National Association of State Departments of Agriculture. 1997. Idaho State CAFO Standards Survey Response.

Memorandum of Understanding: The Idaho Dairy Pollution Initiative. Signed 1995.

Palmer, Jack. 1993. Idaho Waste Management Guidelines for Confined Feeding Operations: As Amended by Idaho Waste Management Guidelines Task Force 1997. Idaho Department of Health and Welfare Division of Environmental Quality.

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions Compiled by G. Beatty, EPA, Office of Water, Washington, D.C.

Background

Since 1979, the Illinois Environmental Protection Agency (IEPA) has operated a livestock waste management program that provides for inspection of livestock facilities throughout the state (Illinois EPA 1996a). However, in response to public concerns with the growth of large livestock production facilities in Illinois, the Illinois General Assembly adopted the Livestock Management Facilities Act (LMFA) on May 21, 1996. Following the adoption of the LMFA the Illinois Pollution Control Board (IPCB) approved rules to address new and expanding livestock facilities in Illinois. These rules, which specifically addressed lagoon design, were adopted on May 20, 1997. The LMFA program is administered by the Illinois Department of Agriculture (IDOA).

1.0 Lead Regulatory Agency

Illinois Department of Agriculture (IDOA) administers the Livestock Management Facilities Act and Illinois Environmental Protection Agency (IEPA) administers the NPDES program for concentrated animal feeding operations.

2.0 Lead Agency for Voluntary Programs

Unidentified.

3.0 Other State Agency Involvement

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The Illinois Department of Public Health, Illinois Department of Natural Resources, Illinois EPA and IDOA were directed by the Illinois General Assembly to study livestock waste management and propose regulations to the IPCB in November of 1996.

4.0 State Regulations Regarding CAFOs

The NPDES requirements and livestock waste regulations are contained in the State of Illinois Rule and Regulations Title 35 Environmental Protection, Subtitle E: Agriculture Related Pollution, Chapter I: Pollution Control Board, Parts 501-504. These regulation also contain Parts 560 (Design Criteria for Field Application of Livestock Waste), Part 570 (Design and Maintenance Criteria Regarding Runoff Field Application Systems, and Part 580 (Procedures for Reporting Releases of Livestock Waste from Lagoons). Part 506 is currently (November 1998) available on the IPCB web site:

www.ipcb.state.il.us/title35/35conten.htm.

5.0 State Voluntary Programs

The only incentives offered to CAFO operators are through the Federal EQIP program.

6.0 Type of Permits

NPDES

Illinois is authorized to administer the Federal NPDES permitting program and, since 1992, has had a general NPDES permit for CAFOs.

Other

In accordance with the LMFA, Illinois law requires all new or modified livestock facilities with earthen livestock waste lagoons to register with the IDOA (Illinois EPA, 1996b).

7.0 Permit Coverage

The general NPDES permit issued in 1992 by the State of Illinois provided coverage for all animal feeding operations already operating with an individual NPDES permit and operations that were required to have an individual NPDES permit.

The LMFA was promulgated to control waste from livestock facilities with more lagoons, and provides for operator certification and the development of livestock waste management plans.

8.0 Permit Conditions

Approvals

Owners or operators of animal waste facilities with previously permitted discharges (before 1992 and the development of the general permit) were required to submit a Notice of Intent (NOI) to seek coverage under the general NPDES permit. Likewise, new dischargers need to apply for coverage under the general permit (Illinois Draft NPDES General Permit, 1992).

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Currently, managers of livestock facilities must obtain registration and certification from the IDOA to build a livestock waste management facility with an earthen lagoon. IDOA requires that all proposed lagoon locations must be initially investigated and certified to comply with the LMFA requirements by a registered professional engineer or a registered professional geologist (Illinois EPA, 1996b).

Lagoon Design and Specifications

New or modified facilities that have not placed manure in lagoons are required to investigate the soil below the lagoon site under the supervision of a registered professional engineer or registered professional geologist. The facility operator must take steps (i.e., installing clay or synthetic liners) to protect any aquifer within 50 feet of the lagoon bottom.

Waste lagoon design standards (as described in 35 ILCS 506 Subpart B) must follow the design specifications of either the American Society of Agricultural Engineers or the Natural Resources Conservation Service. Extra requirements, however, may be imposed by the IDOA when protection of groundwater is a concern.

Liner requirements are determined based on the distance from the bottom of waste lagoon to the groundwater aquifer. If the distance between the aquifer and the lagoon is less than 20 feet, then a liner and ground water monitoring are required. A liner, but not monitoring, is required for lagoons with bottoms 20 to 50 feet from a ground water aquifer. There are no liner or monitoring requirements for lagoons with a 50-foot distance between ground water and the lagoon bottom.

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A minimum of 1 foot of freeboard is required for facilities with less than 300 animal units. Animal feeding operations with 300 or more animal units must maintain 2 feet of freeboard.

New or modified lagoons must add water up to at least 60% of design volume before any waste is added.

Discharge Rules

No discharges are allowed except those caused by catastrophic storm events. Livestock waste handling facilities must be maintained to contain the precipitation and runoff from a 25-year, 24-hour storm event.

Waste Management Plans

Waste Management Plans are required for all facilities with 1,000 to 7,000 animal units. These plans must be maintained on file at the livestock management facility and available for inspection by IDOA personnel. Animal feeding operations with more than 7,000 animal units must prepare a waste management plan approved by IDOA before operating. All waste disposal records must be maintained for three years.

The waste management plan must contain the following items:

- An estimate of the annual volume of waste to be disposed
- The number of acres available for disposal
- An estimate of the nutrient value of the waste

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- An indication that livestock waste will be applied agronomically based on nitrogen demands of the crops to be grown
- An indication that livestock waste applied within 1/4 mile of any residence shall be incorporated on the day of application
- A provision that waste will not be applied 200 feet from surface water unless the water is upgrade, and waste will not be applied within 150 feet of potable water supply wells
- A provision that prevents the application of waste within the 10-year floodplain unless injection or incorporation is used
- A provision that allows waste disposal on frozen or snow covered ground only if land slopes are 5% or less or adequate erosion control practices are in place

Separation Distances

Animal feeding operations with 50 to 999 animal units must be 1/4 mile (1,320 feet) from the nearest occupied non-farm residence and 1/2 mile (2,640 feet) from populated areas. CAFOs with 1,000 to 7,000 animal units must be an additional 220 feet beyond the 1/4 mile limit from residences for every 1,000 animal units above 1,000. Also, CAFOs with 1,000 to 7,000 animal units must be an additional 440 feet beyond the 1/2 mile limit from populated areas for every 1,000 animal units above 1,000 (IDOA, 1997).

Land Application Requirements

Waste should be applied at agronomic rates based on the nitrogen needs of crops and any land application of wastes requires that wastes be assimilated into the land to prevent discharges to waters of the state (Illinois Draft NPDES General Permit, 1992).

A livestock waste handling facility with 300 or more animal units must be operated under the supervision of a certified livestock manager. Certification can be obtained by attending a training session sponsored by IDOA. Animal feeding operations with more than 1,000 animal units must be operated under the supervision of a certified livestock manager that has attended a training session and passed a written competency examination.

9.0 Number of AFO/CAFO facilities permitted

There have been 17 individual NPDES permits issued to CAFOs in Illinois. Twelve of those permits have expired (USEPA Permit Compliance System August, 1997). Although no statistics are maintained on AFOs organized by size class, as of 1995 there were 36,600 facilities with cattle or swine (USEPA, 1998).

10.0 Enforcement

Illinois EPA referred 10 livestock waste cases to the Illinois Attorney General for enforcement in 1997. There were a recorded 7 fish kills related to livestock waste discharges in 1997, with an assessed value of \$3447.84. In addition to these actions, the Illinois EPA issued 26 noncompliance advisory letters, 36 violation notices and 11 notices of intent to refer the action to the Illinois Attorney General, all in 1997.

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If a facility fails to register their waste lagoons, IDOA may issue a notice that allows the facility 10 working days after receipt of the notice to register and certify the lagoon. If the owner or operator does not comply with the notice IDOA can issue a cease and desist order.

Other enforcement actions include the following:

- If the lagoon is not constructed in accordance with the rules, fines of not more than \$5,000 may be levied.
- Failure to prepare, maintain and implement a waste management plan will draw a warning letter from IDOA for the first violation. If the problem has not been corrected after 30 days then the facility will be fined up to \$500 and has to enter into an agreement with IDOA to prepare, maintain, and implement a plan. Operational cease and desist orders follow if the owner or operator does not comply or refuses to enter into agreement. Similar actions are taken when livestock managers violate certification requirements.
- If an operation violates the setback rules, then IDOA may issue a cease and desist order to prevent livestock from entering into the livestock management facility and prohibits use of the waste management facility, or they may issue a cease and desist order. The cease and desist orders can be canceled when the facility comes into compliance (IDOA, 1997).

11.0 Inspection Programs

From 1985 to 1994 the IEPA conducted an average of 222 inspections per year and found that 67 percent of livestock facilities inspected required corrective actions. The average number of inspections from 1995 to 1997 rose to 386. The majority of first-time facility visits are prompted by citizen complaints. Facilities which are the subject of water pollution complaints slightly outnumber facilities which are the subject of odor complaints.

As a condition of the current livestock waste lagoon registration process, IDOA may conduct periodic site inspections to ensure compliance. Illinois Department of Agriculture is also authorized to conduct inspections anytime during the development process and in response to complaints. All new or modified waste lagoons must be inspected by the operator under the direction of a licensed professional engineer.

12.0 Support

There are seven and one-half FTEs working on AFO/CAFO issues (USEPA, 1998).

13.0 Case Studies/Innovative Programs

Illinois is one of the few states that requires registered operators of CAFOs to provide proof of financial responsibility (either through insurance, surety bond, or other form of guarantee) for the closure of lagoons and proper disposal of their contents if the facility were to stop operations (IDOA, 1997).

14.0 References

Agena, Ubbo. 1995. Animal Waste Control Program of Iowa and Eight Other States. Iowa Department of Natural Resources Environmental Protection Division.

Illinois Department of Agriculture (IDOA). 1997. Livestock Management Facilities Act, Adopted May 20, 1997. State of Illinois Department of Agriculture, Bureau of Environmental Programs, Springfield, Illinois.

Illinois Environmental Protection Agency. [Online] 1996a. Citizen Complaints are Farmed Out to Illinois EPA Agricultural Specialists. Available: <http://www.epa.state.il.us/pubs/progress/v21-n1/agriculture.html> [1997, September 24].

Illinois Environmental Protection Agency. [Online] 1996b. Illinois EPA Gains Partner in Control of Agricultural Pollution. Available: <http://www.epa.state.il.us/pubs/progress/v21-n1/agriculture.html> [1997, September 24].

Illinois Draft NPDES General Permit. (1992, December 4) Illinois EPA.

Jann, S. Environmental Protection Agency, Region 5. Summary of state program information sent to Ruth Much (SAIC), Fall 1997.

National Association of State Departments of Agriculture. 1997. Illinois State CAFO Standards Survey Response.

Compendium of State AFO Programs

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated

Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions

Compiled by G. Beatty, EPA, Office of Water, Washington, D.C.

1.0 Lead Regulatory Agency

Indiana Department of Environmental Management (IDEM) is responsible for developing rules related to confined animal feeding operations (CAFOs).

2.0 Lead Agency for Voluntary Programs

IDEM is authorized to take the lead on the development of technical and compliance assistance programs for CAFO operators. The programs may be administered by the Department, a college or university, or a contractor.

3.0 Other State Agency Involvement

The Water Pollution Control Board plays a role in protecting the environment from pollution related to CAFOs. IDEM-SCS assists the CAFO program with reviewing the technical requirements for CAFOs and by responding to complaints about CAFOs. The county board of health also may work cooperatively with the CAFO program on complaint response.

4.0 State Regulations Regarding CAFOs

The Indiana Confined Feeding Control Law, Indiana Code 13-1-5.7 (IC 13-18-10 after July 1, 1996) requires CAFOs to receive approval from IDEM of plans for waste treatment control facilities (Indiana Code; Manure Management Policy, AW-1). CAFOs must also obey the rules of

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the Indiana Water Pollution Control Law, Indiana Code 13-1-3 (IC 13-18-1-1 after July 1, 1996).

There are no wetland, water use, air quality or other environmental regulations related to CAFO (NASDA, 1997).

5.0 State Voluntary Programs

IDEM created the Compliance and Technical Assistance Program (CTAP) to help the regulated community to achieve compliance and to encourage cooperation between IDEM, businesses and the community. A 1997 law revision requires that educational, training and technical assistance programs are in place to help CAFO operators. There were no such programs in place specific to CAFOs at the time of NASDA's state survey on waste and management regulations (NASDA, 1997).

EQIP benefits are an incentive for CAFO operators.

6.0 Types of Permits

NPDES

Indiana may issue NPDES individual permits, but has not done so yet.

Other

There are no state permits, but CAFOs must seek approval letters from the State for various activities (Jann, 1997; NASDA, 1997). Anyone that proposes to start a CAFO must submit an

application form and receive approval to begin construction of the CAFO. In addition to the application form, the applicant must submit design and operation plans for the manure treatment and control facilities, a manure management plan, and the application fee. Proposed construction on undeveloped land also requires that the applicant notify persons who own adjoining properties, occupants of the adjoining land, and county executives.

7.0 Permit Coverage

State approvals are required for operations with more than 600 swine, 300 cattle, and 30,000 poultry (Manure Management Policy AW-1; NASDA, 1997).

8.0 Permit Conditions

Approvals

Indiana has an approval process whereby approval letters must be obtained for various CAFO activities. Site appraisals are required for waste structures, and the state must approve construction plans (NASDA, 1997).

Lagoon Design and Specifications

There are standards in place for waste structure design. Lagoons must be designed with a professional engineer or NRCS. Facilities constructed before July 1, 1993 must provide a minimum 90-day storage. Newer structures must have a minimum 120-day holding capacity (Jones and Sutton, 1996). The storage structure should have a 2-foot freeboard and be able to control wastes during a 25-year storm event. Two-foot compacted clay/bentonite or synthetics

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liner materials are acceptable. Allowable lagoon seepage is evaluated as part of the construction plan. Designs must comply with other state groundwater pollution laws (NASDA, 1997).

Discharge Rules

Unidentified.

Waste Management Plans

According to Indiana Code 13-18-10-2.3 operations have to resubmit manure management plans every five years for the letter of approval to remain valid.

Separation Distances

There are no specific state standards regarding separation distance from dwellings or property lines. The required distance from wells, roads, and water bodies varies. The distance to ground water is evaluated as part of the construction plan (NASDA, 1997). Dry/liquid storage in beneath-the-building concrete, exterior covered or uncovered concrete pits and open steel tank waste treatment/control facilities may not come within 50 feet of any road, 100 feet of any well, or 100 feet of any stream, drainage ditch or other body of water. Nor may any earthen or concrete confinement lot. New construction for liquid storage in earthen waste treatment/control facilities must be located to provide the following minimum separation distances: 50 feet from any road, 100 feet from any water well and 300 feet from any stream, drainage ditch or other body of water (Jones and Sutton, 1996; Manure Management Policy AW-1).

Application of nitrogen is based on crop needs (NASDA, 1997). Generally, application of nitrogen is limited to 150 pounds of N per acre unless the manure management plan justifies a different rate. Nutrients must be applied by the end of the day if it is to be applied on a floodplain or on an unvegetated slope of greater than 6 percent (Jones and Sutton, 1996). Frozen soils with a slope of greater than 2 percent are to be avoided when applying manure. Land application of manure must take place at least 200 feet from wells, 50 feet from roads, and 100 feet from streams, drainage ditches and ponds (Manure Management Policy, AW-1).

9.0 Number of CAFO Facilities Permitted

No facilities are covered under the Federal NPDES permit program while approximately 4,000-5,000 facilities have been approved under State programs (USEPA/State Feedlot Workgroup, 1993).

10.0 Enforcement

IDEM Office of Enforcement is responsible for ensuring that individuals, businesses and government entities are in compliance with Indiana's environmental laws. The office uses enforcement to bring facilities into compliance, deter future noncompliance and improve the environment. Violators are identified through complaints. Violators are only referred to the Office of Enforcement when other strategies used by the offices that detected violations are not successful in getting serious violations corrected (IDEM Office of Enforcement).

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IDEM has the authority to levy fines (USEPA/State Feedlot Workgroup, 1993; IDEM Office of Enforcement).

The Office of Enforcement may send a Notice of Violation (NOV) to a violating facility that gives the respondent the opportunity to discuss violations and solutions through a conference. The Office and the respondent may also develop an Agreed Order which gives the respondent 60 days to outline steps that the respondent must take to come into compliance with the law. The respondent may be fined for prior noncompliance and for not meeting any of the required steps outlined under the Agreed Order. Alternatively, a Commissioner's Order requires a specific action to correct a violation and/or payment of a fine. Finally, the Office of Enforcement may levy fines up to \$25,000 per day per violation. The magnitude of the fine depends on the magnitude of the violation, potential harm to human health and the environment (major, moderate, minor), economic gain by the violator for noncompliance, and the violator's effort to achieve compliance. IDEM may also give penalties up to \$10,000 for violation of filing or reporting requirements (USEPA/State Feedlot Workgroup, 1993; IDEM Office of Enforcement).

11.0 Inspection Programs

There are routine on-site inspections of CAFOs (though initial inspections were not required until at least 1996). Fish kill reports, complaints, or contact with agriculture lenders were used to identify non-permitted CAFOs.

12.0 Support

In 1993, Indiana had 1 full-time equivalent (FTE) staff person on the CAFO program dedicated to permitting, inspecting and enforcing livestock waste control regulations. It was estimated that 6-7 were needed to run the program most efficiently (USEPA/State Feedlot Workgroup, 1993).

13.0 Case Study/Innovative Programs

Unidentified.

14.0 References

IDEM Office of Enforcement. (No date). [Online]. IDEM. Available: <http://www.ai.org/idem/oe/brochure.html>

IDEM Civil Penalty Policy. (1990, August 21). [Online]. IDEM. Available: <http://www.ai.org/idem/oe/cpp.html> [1997, December 9].

IDEM to develop rules for confined animal feeding. (1997, October 9). [Online]. IDEM. Available: <http://www.ai.org/idem/news/oct/HOGS.HTM> [1997, November 10].

Indiana Code 13-18-10 (As Amended Through the 1997 Regular Session). (No date). [Online]. Office of Code Revision Indiana Legislative Services Agency. Available: <http://www.ai.org/legislative/ic/97/title13/ar18/ch10.html> [1997, November 10].

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Jann, Steve. U.S. Environmental Protection Agency, Region 5. Summary of state program information sent to Ruth Much, Fall 1997.

Manure Management Policy, AW-1. (No date.) [Online]. IDEM Office of Water Management. Available: <http://www.ai.org/idem/owm/aw-1-mcc.html> [1997, November 10].

Manure Management Policy, AW-1. (1992, November 4).

National Association of State Departments of Agriculture (NASDA). 1997. State Survey on Waste and Manure Management Regulations.

NPS Management Plan Objectives and Key Action Steps. (No date). [Online]. IDEM. Available: <http://www.ai.org/idem/owm/nps/planobj.html> [1997, November 10].

U. S. Environmental Protection Agency. 1993. The Report of the EPA/State Feedlot Workgroup. U.S. EPA Office of Wastewater Enforcement and Compliance, Washington, D.C.

Background

The Kansas Department of Health and Environment (KDHE) has regulated feedlots since 1968 (USEPA, 1998). The focus of the program has been traditionally on large cattle feeding operations, but within the last few years the emphasis has been on large corporate hog operations. The state legislature passed a new swine facility environmental regulation package in April 1998 (USEPA, 1998).

1.0 Lead Regulatory Agency

The Kansas Department of Health and Environment (KDHE), Bureau of Water has regulatory authority over livestock operations with more than 300 head (a "head" equals one animal regardless of species) and with the potential to cause environmental degradation (USEPA, 1993).

2.0 Lead Agency for Voluntary Programs

Within the Bureau of Water, the Nonpoint Source Section implements section 319 of the Clean Water Act and coordinates the programs designed to eliminate nonpoint source pollution.

3.0 Other State Agency Involvement

The Animal Health Department provides operating licenses to feedlots with more than 1,000 animal units and the State Board of Agriculture, Division of Water Resources issues water appropriation permits.

The Legislative Division of Post Audit audited the CAFO regulatory program in early 1997 and identified many deficiencies that the KDHE is working to correct (KDHE News, 1997).

The new swine facilities law requires the Kansas Department of Agriculture and KDHE coordinate and implement soil monitoring and implementation of nutrient management plans (KDHE, 1998)

4.0 State Regulations Regarding AFO

The permit program for water pollution control facilities serving livestock operations was established under the provisions of K.S.A. 65-165 (Permit for Discharge of Sewage) and is implemented by K.A.R. 28-18-1 through 4 (Agricultural and Related Waste Controls) and K.A.R. 28-16-56c through 63, as modified by Senate Bill 800 effective July 1, 1994. Waters of the state are identified to include subsurface waters (USEPA, 1993).

The Swine Facility Law (House Bill 2950) was passed in April 1998. Regulations are being developed under the new law and KDHE must adopt all regulations by January 1999 (KDHE, 1998).

5.0 State Voluntary Programs

A total of \$9,327 in grant/cost share money was issued to livestock operators for wastewater control systems in 1991 (USEPA, 1993).

6.0 Type of Permits

NPDES

Kansas is authorized to administer the NPDES permitting program and issues individual NPDES permits to livestock facilities with capacities exceeding 1,000 animal units as defined by Federal regulation (USEPA, 1998). Kansas Department of Health and Environment also has authority to issue a general permit to regulate livestock since late 1993.

Other

Construction and operating permits are required for any new or expanding livestock operations with the capacity for 300 animal units (i.e., 300 animals) (Agena, 1994). Small facilities (less than 300 animal units) are issued Certificates of Compliance if they do not pose a threat to waters of the state.

7.0 Permit Coverage

Under state law, the following types of confined livestock feeding operations must be registered with the KDHE (USEPA, 1993):

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- Animal feeding operations with 300 or more head of cattle, hogs, or sheep (A head is equal to one animal, regardless of species).
- Livestock operations that use wastewater control facilities
- Operations that present a potential water pollution problem
- Commercial poultry houses with more than 1,000 birds
- Any operation who volunteers to come under state permitting regulations

Also, any livestock facility that discharges, or has the potential to discharge into waters of the state requires a permit. Permitting decisions are prioritized based on facility size and proximity to water sources and residences. Unpermitted operations that have potential for causing adverse human health effects, aquatic damage, or nuisance complaints are given top priority in the permitting process.

8.0 Permit Conditions

Approvals

NPDES permits are needed for facilities with more than 1,000 animal units (as defined by EPA). Construction and operating permits are required for new facilities with more than 300 animal units and Certificates of Compliance are issued to smaller animal feeding operations.

Kansas has set seepage limits for lagoons and earthen basins at 1/4 inch per day (Agena, 1994).

The KDHE is to be notified whenever the freeboard of a lagoon falls below two feet. The bottom of waste lagoons must be at least 10 feet above the groundwater aquifer, unless measures are taken to insure that leakage will not reach groundwater (ASIWPCA, 1997).

Discharge Rules

Unidentified.

Waste Management Plan

Management plans that contain site maps showing land application sites and detailing what, if any, soil testing will be conducted are a required component of the permitting process. Also, the new Swine Facility Law requires all facilities with more than 1,000 animal units to develop a manure management plan (KDHE, 1998).

Separation Distances

New livestock feeding operations with a capacity below 299 animal units have no separation requirements. Facilities with 300 to 999 animal units must be at least 320 feet from residences. Larger capacity feeding operations must be at least 4,000 feet from residences. Animal feeding operations must be 100 feet from property lines and water wells (ASIWPCA, 1997).

Land application of livestock wastes is to be based on meeting the agronomic nitrogen needs of the crops being fertilized. If soil testing is not conducted, land application is restricted to no more than 250 pounds/acre of nitrogen. Application is to be conducted so no ponding or puddling occurs and wastes should not be applied to highly erodible land. Application must be 100 feet from water wells, 660 feet from residences, and 200 feet from waterways. Wastes should not be applied on frozen ground or during precipitation. Suitable days for dewatering and disposal are preceded by three days with less than 0.05 inches of rainfall per day and average temperatures above freezing (ASIWPCA, 1997).

The new Swine Facility Law will require all facilities with more than 1,000 animal units to develop a nutrient utilization plan that is approved by Kansas Department of Agriculture (KDHE, 1998).

9.0 Number of AFO/CAFO facilities permitted

The State of Kansas has issued 366 individual NPDES permits and 2,472 state permits. Of the over 2,000 state permits, 1,500 have been issued to facilities with more than 300 animal units (USEPA, 1998; EPA, 1993).

10.0 Enforcement

Staff at KDHE rely on reports of fish kills or complaints to conduct enforcement inspections (USEPA, 1993). While the KDHE can initiate investigations and report permit violations, officials prefer to work with livestock operators to resolve problems. The State Attorney General has the

authority to levy fines under the Kansas Wastewater Discharge Control Law (Section 65-167).

Penalties between \$2,500 and \$25,000 will be assessed for willful or negligent discharges of sewage into state waters without a permit. Civil penalties of up to \$10,000 can be levied for violations of the following:

- Sewage discharge permits
- Effluent or water quality standards
- Filing requirements
- Reporting, inspection, or monitoring requirements
- Orders from the Secretary of Health and Environment

Enforcement action against those who over apply wastes to agricultural lands is unlikely to be successful unless it could be demonstrated that water quality problems were clearly attributable to over application (Agena, 1994).

Enforcement actions average four a year. In 1996, two enforcement actions resulted in the collection of \$15,000 in fines. Eight enforcement actions in 1997 resulted in collection of \$10,600 in fines with \$47,500 under appeal (USEPA, 1998).

11.0 Inspection Programs

The permitting process requires an initial site visit by KDHE before the applicant submits a permit application. A post-construction inspection is required to ensure the facility followed the approved design plans for waste structures. NPDES permitted facilities are inspected annually. If a facility has a poor waste management record it will be inspected every six months. Facilities with good

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waste management practices will be inspected every two years. State permitted facilities are inspected every two years if operations are not causing problems. Facilities with a *Certificate of Compliance* are inspected every four years.

In 1995 and 1996, a major inspection effort was completed by inspecting 1,360 newly registered feedlots. In 1997, KDHE inspected 210 NPDES permitted CAFOs and 432 feedlots with state permits (USEPA, 1998).

In accordance with the new (April 1998) Swine Facility Law, KDHE must inspect facilities with more than 3,725 animal units annually. Facilities with 1,000 to 3,725 animal units must be inspected every two years and facilities with less than 1,000 animal units must be inspected every 5 years. Problem facilities must be inspected every six months until the problems are corrected (KDHE, 1998).

12.0 Support

In 1994, Kansas had nine employees devoted to the state animal waste control program (Agena, 1994). Six employees conducted compliance inspections, two worked on permitting and plan review, and one served as support staff (USEPA, 1993). In 1998, 24 FTE are dedicated to KDHE livestock regulatory program (USEPA, 1998).

13.0 Case Studies/Innovative Programs

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Kansas's Swine Facility Law serves to further regulate large swine CAFOs. Environmental protection measures beyond the NPDES requirements are mandated for CAFOs with more than 3,725 animal units, including increased inspection and additional setback requirements (KDHE, 1998).

14.0 References

Agena, Ubbo. 1994. Animal Waste Control Programs of Iowa and Eight Other States. Iowa Department of Natural Resources, Environmental Protection Division.

Association of State and Interstate Water Pollution Control Administrators (ASIWPCA). 1997. CAFO Standards for Pork Production, Survey. December 1997. ASIWPCA Washington, D.C.

Kansas Department of Health and Environment. [Online] 1998. KDHE Preparing to Implement Provisions of New Swine Facility Law. Available: <http://ink2.ink.org/kdhe/news-98/9497.html>.

Kansas Department of Health and Environment. 1994. New Legislation Impacts on Kansas Livestock Operations: Registration & Permitting, Separation Distances, and Fees. Pamphlet describing rules and regulations regarding Senate Bill 800 effective July 1, 1994.

Kansas Department of Health and Environment. 1993. Design Standards for Confined Livestock Feeding Operations. Bureau of Water, Industrial Programs Section, Agricultural Waste Unit.

Compendium of State AFO Programs

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions
Compiled by G. Beatty, EPA, Office of Water, Washington, D.C.

U.S. Environmental Protection Agency. 1993. The Report of the EPA/State Feedlot Workgroup.
Office of Wastewater Enforcement and Compliance, Washington, D.C.

1.0 Lead Regulatory Agency

Kentucky's NPDES program is administered by the Kentucky Department of Environmental Protection, Division of Water. The Kentucky Division of Water (KDOW) is also responsible for permitting wastewater systems.

2.0 Lead Agency for Voluntary Programs

Kentucky Division of Water administers nonpoint source pollution grants.

3.0 Other State Agency Involvement

Although no other state agency involvement was identified, the Division of Water has a Memorandum of Agreement with the Natural Resource Conservation Service to coordinate activities as they relate to animal waste permitting (ASIWPCA, 1997).

4.0 State Regulations Regarding AFO

Regulation 401 KAR 5:009 (permits for swine feeding operations - SFO's) went into effect on November 20, 1998. After review by Legislative committees, it was found to be deficient (i.e., Legislature views the regulations as too restrictive in essence) and will sunset at the close of the next Legislative sessions starting Jan. 2000. An acceptable replacement regulation may be adopted before that happens - or - the legislative may offer legislation at that time to address the matter.

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The Agriculture Water Quality Act was passed by the Kentucky General Assembly in 1994 to protect surface and groundwater resources from agricultural pollution. The Act requires all land owners with 10 or more acres to develop and implement a farm water quality plan based upon guidance from a Statewide Water Quality Plan (KDOW, 1997). Technical and financial assistance may be available during plan development. Landowners must select best management practices (BMPs) for their individual plans from the Statewide Water Quality Plan and implement the BMPs within five years.

The enabling legislation for Wastewater Facility Construction Permits is KRS 224.10-100 and 224.70-1 10. Construction permit regulations are found in 401 KAR **5:005**.

5.0 State Voluntary Programs

Funds provided through Section 319 Nonpoint Source Implementation Grants can pay for up to 60 percent of the total cost of pollution control projects. Kentucky is developing voluntary guidelines for poultry operations (USEPA, 1998)

6.0 Type of Permits

NPDES

Kentucky administers the NPDES Program and issues NPDES permits through the Kentucky Discharge Elimination System (KPDES).

Other

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Kentucky's Division of Water issues three types of permits, besides the NPDES permit, that directly affect animal feeding operations:

- Wastewater Facility Construction Permits
- Swine Waste Management Permit (SWMP)
- Kentucky No Discharge Operational Permits (KNDOP)

7.0 Permit Coverage

Wastewater Facility Construction Permits are required prior to beginning construction or modification of any sewage system (i.e., any system designed for collecting, pumping, or disposing of waterborne sewage) used for treatment of wastewater.

Swine Waste Management Permits are a required component of the emergency Swine Feeding Operations regulation. This regulation requires all new swine feeding operations and existing operations that increase their facility's capacity to the extent that they meet the definition of a "swine feeding operations" or SFO. Swine feeding operations are facilities that confine 1,000 or more swine units (a swine unit is similar to both EPA's and NRCS's definition of an animal unit) (ASIWPCA, 1997).

Kentucky No Discharge Operational Permits are issued to AFOs rather than NPDES permits (USEPA, 1998).

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Kentucky Pollution Discharge Elimination System (KPDES) Permits are required for any point source in the State of Kentucky, including CAFOs as defined by 40 CFR 122.23 and Part 122 Appendix B.

8.0 Permit Conditions

Wastewater Facility Construction Permits require detailed plans that describe discharge points and highlight new construction. An engineering report must be submitted before construction is authorized. After construction, the permit applicant must submit certification by a registered engineer that the facility was constructed according to the approved plans.

The Swine Feeding Operations regulation contains construction and operational requirements for swine waste lagoons and the land application of waste from lagoons. The regulations also provide siting restrictions for waste lagoons, restrictions on land applications, and monitoring and testing requirements as highlighted below. Construction and design requirements for swine waste lagoons are detailed in the regulations.

Approvals

Unidentified.

Lagoon Design and Specifications

A swine waste lagoon must have one foot of freeboard, a 2 foot high berm, an emergency spillway, and may be larger than 5 acres in size. Lagoons must be able to contain one year of production

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solids, 180 days of manure, 12 inches of excess precipitation, and the volume of one 25-year, 24-hour storm event. Permeability cannot exceed 1×10^{-1} centimeters/second and monitoring wells are required. There must be at least 5 feet from bottom of the lagoon to ground water unless an approved synthetic liner is installed. Although there is no financial assurance requirement, closure requirements stipulate that abandoned lagoons be emptied, filled, and revegetated.

Discharge Rules

Unidentified.

Waste Management Plans

Each swine feeding operation must develop a nutrient management plan that describes how waste will benefit surrounding land, when and where it will be applied, and a description of the crop nutrient requirements. A monitoring plan designed to assess the integrity of the swine waste lagoon requires the permittee to conduct groundwater monitoring and maintain records for 10 years.

Separation Distances

A barn or waste lagoon cannot be in a 100-year floodplain or a jurisdictional wetland. Barns or waste lagoons must be 1,500 feet from dwellings not owned by applicant and 150 feet from lakes or rivers. When injection is used during land application a minimum distance of 500 feet from dwellings and 50 feet from property lines, must be maintained. If waste is being applied to land without injection the minimum distance increase to 1,000 feet from dwellings and 500 feet from property lines. Land application is not allowed within 150 feet of water wells (ASIWPCA, 1997).

Operators of waste management systems that intend to land apply liquid wastes must take soil samples from the fields to be treated with swine waste and complete an analysis of swine waste nutrient content. Land application is not allowed on saturated ground, during precipitation, or on frozen ground, and waste must not be applied at a rate that exceeds infiltration. All swine waste application areas must have a filter strip on its lowest side (ASIWPCA, 1997).

9.0 Number of AFO/CAFO facilities permitted

Possibly 50 facilities meet or exceed the Federal CAFO threshold and require NPDES permits. There are more than 1200 KNDOP AFO permits for beef, dairy, and swine operations (USEPA, 1998). No poultry operations are currently permitted due to the “dry” manner in which litter is handled.

10.0 Enforcement

Unidentified.

11.0 Inspection Programs

Periodic inspections by Division of Water inspectors in response to complaints or identified problems (USEPA, 1998).

12.0 Support

Currently, 0.2 FTE is devoted to AFO/CAFO permitting issues. No additional staff is expected to be added in the near future (USEPA, 1998).

13.0 Case studies or examples of innovative/interesting projects or programs

Unidentified.

14.0 References

Association of State and Interstate Water Pollution Control Administrators (ASIWPCA). 1997.

CAFO Standards for Pork Production, Survey. December 1997. ASIWPCA Washington, D.C.

Kentucky Division of Water (KDOW). [Online]. Other Programs to Address Water Quality Issues.

Available: <http://water.nr.state.ky.us/dow/303other.htm>. [November 3, 1997].

Statement of Emergency 401 KAR 5:009. [Online]. Available: <http://www.lrc.state.ky.us/kar/401/005/009.htm>

and <http://www.lrc.state.ky.us/kar/401/005/002.htm>

[November 3, 1997].

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated

Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions

Compiled by G. Beatty, EPA, Office of Water, Washington, D.C.

Background

Animal wastes from dairy operations are a documented source and/or suspected source of water quality impact in southeastern Louisiana. The recent growth of the poultry industry is bringing greater attention to water quality impacts from agriculture. The proper management of dairy and poultry wastes is one of the primary water quality issues in Louisiana. Louisiana currently has four facilities listed as CAFOs.

1.0 Lead Regulatory Agency

Louisiana Department of Environmental Quality (DEQ) has primary authority for NPDES/CAFO permit issuance, inspection, and enforcement.

2.0 Lead Agency for Voluntary Programs

Louisiana Cooperative Extension Service and Department of Agriculture and Forestry.

3.0 Other State Agency Involvement

Louisiana DEQ shares responsibility for nonpoint source issue with Louisiana Department of Natural Resources (USEPA, 1998). Louisiana Cooperative Extension Service and Louisiana Department of Agriculture and Forestry also play a role in managing nonpoint source pollution [The specific roles of these agencies was unidentified].

4.0 State Regulations Regarding AFO

See LAC 33:IX.2335

5.0 State Voluntary Programs

Unidentified.

6.0 Type of Permits

NPDES

Louisiana recently (8/27/96) became authorized to administer permits under the NPDES program. Currently, EPA Region 6 has a general permit that covered CAFO facilities in Louisiana. This general permit will expired in early 1998, and although the permit has been reissued it does not cover facilities in Louisiana. Existing CAFOs in Louisiana will be issued individual LPDES permits.

Other

Unidentified.

7.0 Permit Coverage

Louisiana's regulations for permit coverage are the same as those found at 40 CFR §122, Appendix B (USEPA, 1999).

8.0 Permit Conditions

Approvals

Unidentified.

Lagoon Design and Specifications

The Natural Resources Conservation Service has this information.

Separation Distances

No specific separation distances have been developed (NASDA, 1997).

Waste Management Plans

Waste management plans are required to identify nitrogen needs of crop where waste will be applied. (NASDA, 1997). Best management plans are also set up for dairy farms on an individual basis.

Based on agronomic rates as outlined in a waste management plan (NASDA, 1997).

9.0 Number of AFO/CAFO facilities permitted

State animal waste general permits issued before state delegation of the NPDES program are expired. CAFO facilities will not be covered under the newly issued NPDES general permit in Louisiana.

10.0 Enforcement

Enforcement actions issued based on results of inspections.

11.0 Inspection Programs

CAFOs are inspected annually; AFOs inspections are complaint driven.

12.0 Support

Three to four environmental scientists work part-time on CAFO/AFO issues in Louisiana.

13.0 Case Studies/Innovative Programs

Unidentified.

14.0 References

National Association of State Agriculture Departments (NASDA). 1997. Summary Matrix of State Survey on Waste & Manure Management Regulations.

Senkayi, A. U.S. Environmental Protection Agency, Region 4. Summary of state program information sent to Ruth Much (SAIC), Fall 1997.

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions Compiled by G. Beatty, EPA, Office of Water, Washington, D.C.

Background

No large ("large" was not defined) animal feeding operations exist in Maine, and no CAFO NPDES permits have been issued in Maine. Currently, Maine is developing legislation that would define CAFO and set regulatory requirements for those facilities. Maine is also developing legislation to address nutrient management planning (J. Voorhees, EPA Region 1, pers. com., 1997).

1.0 Lead Regulatory Agency

The Office of Agricultural, Natural, and Rural Resources addresses environmental issues associated with agriculture (Office of Agricultural, Natural, and Rural Resources, 1997).

2.0 Lead Agency for Voluntary Programs

Unidentified.

3.0 Other State Agency Involvement

The Maine Department of Agriculture is working jointly with the Maine Department of Environmental Protection and EPA-New England office on new legislation.

4.0 State Regulations Regarding AFO

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Maine's "Manure Law" (17 MRSA 2701-B) establishes rules and standards for proper disposal by various methods (Maine's Manure Law, 1997).

Animal Carcass Disposal Rules established standards for various disposal methods for domestic animal carcasses (Office of Agricultural, Natural, and Rural Resources, 1997).

Maine is currently developing legislation that will define CAFOs and set regulatory requirements. Their objective is to develop a plan to regulate CAFOs that promotes livestock production and protects the environment and human health. Maine is also developing legislation to address Nutrient Management Planning (USEPA, 1998).

5.0 State Voluntary Programs

No state standards for animal feeding operations or design requirements exist, however, Maine requires site-specific best management practices (BMPs) for protection under the state's Right to Farm laws (NASDA, 1997).

6.0 Type of Permits

NPDES

Maine is not authorized to administer the NPDES Permit Program. EPA Region 1 would issue any required NPDES permits.

Other

No state permits are required (NASDA, 1997).

7.0 Permit Coverage

Not applicable.

8.0 Permit Conditions

Not applicable.

Although there are no facilities in Maine that require permitting, the Department of Environmental Protection has developed guidelines for municipal zoning ordinances related to agriculture. These guidelines dictate the following:

- All spreading or disposing of manure is to be accomplished through the practices recommended in Maine Guidelines for Manure and Manure Sludge Disposal on Land (Published by the University of Maine Soil and Water Conservation Commission in 1972).
- Manure shall not be stored within 100 feet, horizontal distance of, a great pond classified GPA or within 75 feet of other water bodies or wetlands.
- Spreading or disposal of manure within the shoreland zone shall require a Soil and Water Conservation Plan.

9.0 Number of AFO/CAFO facilities permitted

There are no facilities in Maine that require permitting under current regulations.

10.0 Enforcement

Pursuant to 17 MRSA §2701-B the Commissioner of Agriculture, Food and Rural Resources responds to complaints of improper storage or handling of manure. If the commissioner identifies a source of manure as a nuisance, and the nuisance is caused by using other than best management practices, the commissioner identifies what BMPs are needed and requires the facility to abide by necessary changes. If the facility responsible for improper manure handling does not adopt BMPs, a written report is referred to the Department of Environmental Protection and the Attorney General. Similarly, if improper manure handling affected water quality and the responsible facility does not adopt BMPs, the matter is referred to the Commissioner of Environmental Protection that a potential water quality violation exists and the Department of Environmental Protection may respond as appropriate (Maine's Manure Law, 1997).

11.0 Inspection Programs

Inspections are complaint driven (NASDA, 1997).

12.0 Support

Unidentified.

13.0 Case Studies/Innovative Programs

Unidentified.

14.0 References

Maine's Manure Law. [Online]. Available: <http://www.state.me.us/agriculture/oanrr/manurelaw.htm> [November 17, 1997].

National Association of State Departments of Agriculture. 1997. Summary Matrix of State Survey on Waste & Manure Management Regulations.

Office of Agricultural, Natural, and Rural Resources. [Online]. Programs and Services. Available: [http://www.state.me.us/agriculture/oanrr/homepage.htm#Programs and Services](http://www.state.me.us/agriculture/oanrr/homepage.htm#Programs%20and%20Services) [November 11, 1997].

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions
Compiled by G. Beatty, EPA, Office of Water, Washington, D.C.

Compendium of State AFO Programs

Voorhees, J. Environmental Protection Agency, Region 1. Summary of state program information sent to Ruth Much (SAIC), Fall 1997.

Background

Maryland's General Assembly recently passed the Water Quality Improvement Act (WCIA) of 1998 and specific regulations supporting the legislation are in development. The Act mandates nutrient management of virtually all Maryland farms and will affect commercial fertilizer industry and poultry feed distributors. The following information highlights specific requirements/components of the WCIA, although the program is not fully developed.

1.0 Lead Regulatory Agency

Maryland Department of Agriculture (MDA) has been given full legislative authority to implement the WCIA of 1998 (MDA, 1998).

Maryland's Department of the Environment Water Management Administration conducts a broad range of activities, including regulating and financing wastewater treatment systems.

2.0 Lead Agency for Voluntary Programs

Maryland Department of Agriculture provides courses on nutrient management as part of Maryland's Nutrient Management Program and directs a water quality cost share program.

The WQIA of 1998 provides tax incentives to farmers and tax deduction for purchase of poultry and manure spreading equipment. The State will provide a cost-share program for facilities that want help in developing nutrient management plans (MDA, 1988).

3.0 Other State Agency Involvement

Unidentified.

4.0 State Regulations Regarding AFO

Environment Article, Title 9, Subtitle 3; COMAR 26.08.01-.04 and COMAR 26.08.08.

Water Quality Improvement Act of 1998.

5.0 State Voluntary Programs

The Maryland Water Quality Cost Share (MACS) Program can provide up to 87.5 percent of the cost to install BMPs, such as animal waste management systems, to protect water quality. Local Soil Conservation Districts provide free technical assistance in designing projects and assist with the application process (Maryland Department of Agriculture).

Maryland Department of agriculture has developed several environmental programs aimed at controlling impacts from agriculture activities and educating farmers and the public on the role of agriculture and environmental conservation. For example, the state provides financial and technical assistance, as well as staffing support, to the state's 24 soil conservation districts in their promotion of soil conservation and water quality programs at the local level. Programs are implemented through Soil Conservation and Water Quality Plans on individual farms, featuring a wide range of agricultural "best management practices" to protect the environment. These plans help farmers prevent soil erosion, control nutrient pollution and protect water quality throughout the state.

6.0 Type of Permits

NPDES

Maryland is authorized to administer the NPDES permitting program. Maryland has developed a draft general NPDES permit for CAFOs. The permit is currently being reviewed by EPA Region 3 (Letzkus, M., EPA Region 3, pers. com., 1997).

Other

Animal Waste Storage Structure Construction Notification permits are required prior to constructing an animal waste or manure storage structure.

Maryland Department of Agriculture requires a Nutrient Management Consultant Certificate/License for anyone who plans to provide state approved nutrient management recommendations.

7.0 Permit Coverage

All agricultural operations with gross annual incomes in excess of \$2,500 or livestock operations with more than 8 animal units.

8.0 Permit/Regulatory Conditions

Farmers applying sludge or manure are required to develop nitrogen and phosphorus nutrient management plans by July 1, 2004.

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By end of year 2,000, all contract feed fed to chickens must contain phytase or other enzymes or additives that reduce phosphorus in poultry waste and regulations to monitor compliance are being develop by MDA (MDA, 1998).

9.0 Number of AFO/CAFO facilities permitted

Unidentified.

10.0 Enforcement

Unidentified.

11.0 Inspection Programs

MDA will conduct on-site evaluation to assess proper implementation of the nutrient management plan. Additional regulations to be develop by MDA to monitor compliance (MDA, 1998).

12.0 Support

By the year 2,000, technical assistance positions will be added to current staff to create a minimum of 110 field positions throughout the State (MDA, 1998).

13.0 Case Studies/Innovative Programs

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Maryland Department of Agriculture is actively involved with environmental conservation programs particularly as they relate to the states Nutrient Management Program. This involvement include conducting specific surveys and studies to characterize agriculture nutrient management practices in Chesapeake Bay water sheds and running a nutrient management training program.

14.0 References

Letzkus, M. U.S. Environmental Protection Agency, Region 3. Summary of state program information sent to Ruth Much (SAIC), Fall 1997.

Maryland Department of Agriculture. [Online]. Maryland Agriculture Water Quality Cost Share Program. Available: <http://www.mds.state.us/resources/mawqcs10.htm> [November 24, 1997].

Maryland Department of Agriculture. 1998. MDA Set to Develop New Nutrient Management Regulations. Maryland Department of Agriculture News Release, May 15, 1998.

Background

Although there are no large ("large" was not defined) confined feeding operations in Massachusetts (Voorhees, J. pers. com., 1997), EPA Region 1 in partnership with Massachusetts state agencies is developing a model permit for a facility within the state. A state strategy and strategy specific to Buzzards Bay is being developed to address AFOs in Massachusetts (USEPA, 1998).

1.0 Lead Regulatory Agency

Unidentified.

2.0 Lead Agency for Voluntary Programs

Unidentified.

3.0 Other State Agency Involvement

The Massachusetts Department of Environmental Protection, Department of Food and Agriculture, and Coastal Zone Management are working to develop a state strategy (USEPA, 1998).

4.0 State Regulations Regarding AFO

Unidentified.

5.0 State Voluntary Programs

Unidentified.

6.0 Type of Permits

NPDES

Massachusetts is not authorized to administer the Federal NPDES Program. Region 1 of the U.S. Environmental Protection Agency is working to develop a CAFO permit for one facility in Massachusetts.

Other

Unidentified.

7.0 Permit Coverage

Unidentified.

8.0 Permit Conditions

Unidentified.

9.0 Number of AFO/CAFO facilities permitted

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There are no large animal feeding operations in Massachusetts. Currently, EPA Region 1 has not issued any NPDES permits to CAFOs in Massachusetts, but EPA has a Memorandum of Agreement with one facility in the state (Voorhees, J. pers. com., 1997).

10.0 Enforcement

Unidentified.

11.0 Inspection Programs

Unidentified.

12.0 Support

Unidentified.

13.0 Case Studies/Innovative Programs

Unidentified.

14.0 References

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions
Compiled by G. Beatty, EPA, Office of Water, Washington, D.C.

Compendium of State AFO Programs

Voorhees, J. U.S. Environmental Protection Agency, Region 1. Summary of state program
information sent to Ruth Much (SAIC), Fall 1997.

1.0 Lead Regulatory Agency

Michigan Department of Environmental Quality.

2.0 Lead Agency for Voluntary Programs

Michigan Department of Agriculture.

3.0 Other State Agency Involvement

Unidentified.

4.0 State Regulations Regarding AFO

Michigan's Right to Farm Act outlines Generally Accepted Agriculture Management Practices.

There are no new legislative developments regarding CAFOs as of June 1998 (USEPA, 1998).

5.0 State Voluntary Programs

Michigan's Generally Accepted Agriculture Management Practices (GAAMPs) is the guidance document for siting operations, designing waste disposal systems, and applying waste to agriculture lands.

6.0 Type of Permits

NPDES

Michigan is authorized to administer the NPDES program, but does not issues permits to CAFO facilities.

Other

No operating permits are required.

7.0 Permit Coverage

Not applicable.

8.0 Permit Conditions

Not applicable - no permits are issued to CAFOs in Michigan.

The Michigan Department of Agriculture has developed Generally Accepted Agriculture Management Practices (GAAMPs) as a mechanism to protect the environment. The GAAMPs recommend following Natural Resource Conservation Service (NRCS) guidelines in developing and operating animal feedlots (ASIWPCA, 1997).

9.0 Number of AFO/CAFO facilities permitted

No permitting is required. There are 19,000 farms with livestock in Michigan. Michigan Department of Environmental Quality or EPA do not have statistics on AFOs in Michigan organized by size (USEPA, 1998).

10.0 Enforcement

The Michigan Department of Environmental Quality and Michigan Department of Agriculture (MDA) have a Memorandum of Understanding allowing MDA to resolve environmental complaints (ASIWPCA, 1997). There have been approximately 25 enforcement actions against AFOs since 1993 (USEPA, 1998).

11.0 Inspection Programs

No inspections (USEPA, 1998).

12.0 Support

Unidentified.

13.0 Case Studies/Innovative Programs

Unidentified.

14.0 References

Association of State and Interstate Water Pollution Control Administrators (ASIWPCA). 1997.

CAFO Standards for Pork Production, Survey. December 1997. ASIWPCA Washington, D.C.

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated

Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions

Compiled by G. Beatty, EPA, Office of Water, Washington, D.C.

Background

Minnesota's Feedlot Program was established in 1971 to address pollution related to feedlots. There are an estimated 45,000 feedlots in Minnesota of which 24,800 have been permitted by the Minnesota Pollution Control Agency (MPCA) (USEPA, 1998). There are 700 AFOs with 1,000 or more animal units (USEPA, 1998). A study released in 1979 estimated that 9,000 to 14,000 feedlots are within shoreland areas (i.e., within 300 feet of a stream or 1000 feet of a lake) (MPCA, 1997b). Minnesota defines feedlots to include any animal confinement area where manure may accumulate and vegetative cover cannot be maintained, including fur farms, poultry ranges, zoos, and race tracks (MPCA, 1997b). Estimates based on Minnesota agriculture statistics indicate that the amount of livestock and poultry wastes produced in the state would exceed the amount of human waste produced by 40,000,000 people (MPCA, 1997b).

1.0 Lead Regulatory Agency

The feedlot program is administered by the Minnesota Pollution Control Agency (MPCA), Water Quality Division. MPCA feedlot unit issues permits to livestock operations throughout Minnesota. Counties may assume responsibility to issue permits for feedlots up to 1000 A.U. The MPCA issues all permits over 1000 A.U.

2.0 Lead Agency for Voluntary Programs

The Minnesota Department of Agriculture administers a low interest loan program in coordination with the Soil and Water Resources Board and the county Soil and Water Conservation Districts.

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The Soil and Water Resources Board, with help from the county Soil and Water Conservation Districts, manages the cost share assistance program.

3.0 Other State Agency Involvement

The MN Department of Natural Resources issues water appropriations permits to any facility that uses 10,000 gallons of water per day or greater or 1,000,000 gallons per year. Department of Natural Resource's Conservation Officers are sometimes requested to assist in conducting inspections at feedlots.

4.0 State Regulations Regarding AFO

Minnesota Rules Chapter 7020 established the feedlot permitting program.

5.0 State Voluntary Programs

The Soil and Water Resources Board manages a state cost share assistance program. Cost share funds can cover up to 75 percent of the expense for a feedlot project. To be eligible for cost share assistance, projects must receive approval from the Board before construction begins. Also, the Minnesota Department of Agriculture's Agricultural Best Management Practices Loan Program offers low interest loans to help implement water quality improvement practices such as animal waste control structures.

6.0 Type of Permits

NPDES

Minnesota administers the Federal NPDES Program. As such, MPCA issues individual NPDES permits to confined feeding operations as defined by Federal regulation.

Other

State feedlot permits are issued in three separate forms (MPCA, 1997a):

1. *Certificates of Compliance* comprise the largest number of permits issued by MPCA and are issued to facilities that do not have a potential pollution problem.
2. *Interim Permits* are issued for up to ten months to correct pollution problems. Interim permits are also issued for up to ten months for new proposed facilities with construction to ensure it is properly built.
3. *Five-year Feedlot Permits* are issued to facilities that, due to technical or economic reasons, require more than ten months for correcting potential pollution problems or for sites that do not dispose of manure as domestic fertilizer.

7.0 Permit Coverage

Landowners with more than 10 animal units are required to apply for a state feedlot permit under the following conditions (MPCA, 1997a):

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- A new feedlot is constructed (i.e., construction approval is required),
- A feedlot is expanded or modified,
- A change in ownership occurs,
- An existing feedlot is restocked after being abandoned for more than five years, or
- After inspection by MPCA staff determines the feedlot is a potential pollution hazard,
- Near a shoreline (less than 300 feet from a river, or less than 1,000 feet from a lake).

If outside shoreland, a permit is required for landowners with 50 A.U. or greater.

Animal units are defined by the MPCA as the average weight of the animal divided by 1,000 pounds (Chapter 7020.0300 of Minnesota Rules). In Minnesota, one mature dairy cow equals 1.4 animal units, one horse and one slaughter steer equal one animal unit each, and one chicken is 0.01 animal units.

If any livestock, regardless the number, causes a pollution hazard to waters of the state, a permit application must be submitted.

MPCA considers feedlots a potential pollution hazard when the boundaries of the manure storage area or feedlot are:

- Near a shoreline (less than 300 feet from a river, or less than 1,000 feet from a lake),
- In the 100-year flood plain,
- Within 100 feet of a water well,
- In an area draining directly to a sink hole, or
- In a area that drains over shallow soils overlaying fractured or cavernous rock.

A feedlot is also considered a potential pollution hazard if the manure storage facility will cause a significant runoff of manure to surface waters during a 25-year, 24-hour rainstorm or uncontrolled seepage of pollutants into ground water.

NPDES permits are required for operations larger than 1,000 animal units that have the potential to discharge to waters of the state. If any livestock, regardless the number, causes a pollution hazard to waters of the state, a permit application must be submitted.

8.0 Permit Conditions

Approvals

An Environmental Assessment Worksheet (EAW) is required for new construction of, or additions to, livestock facilities that will house 2,000 animal units or more in a total confinement system and/or 1,000 animal units in a partial confinement system. An EAW can also be required of any feedlot by petition of 25 people. If an EAW is required, no permits can be issued until the process is complete.

To complete a state permit application and seek approval for operating an animal waste management system an applicant must have the following:

- A manure management plan that accounts for all manure produced by the facility,

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- A signed agreement by neighbors when a manure management plan involves neighboring property,
- A soil boring record for underground earthen manure storage sites and seepage limits of less than 1/16 of an inch per day, and
- Plans prepared by a USDA NRCS qualified engineer for all earthen storage basins or any manure storage facility with a 500,000 gallon capacity or more.
- For any new or expanding feedlot with the capacity of 500 A.U. or greater, landowners and residents require notification of the proposed facility with in ten-days of submitting the permit application. The notification must be made in person, by first class mail, or by general circulation in the local newspaper.

Lagoon Design and Specifications

Lagoons must be designed to maintain a 1-foot freeboard and have the capacity to retain a 25-year, 24-hour storm event. Seepage limits have been set at less than 500 gallons per acre per day (NASDA, 1997).

All liquid storage structures must be designed by a professional engineer, regardless of the capacity.

Discharge Rules

Unidentified.

Waste Management Plans

Waste Management Plans are a required component of an Environmental Assessment Worksheet (see Section 8.0 *Approvals*)

Separation Distances

There are no state standards for distances between property lines or dwellings. The Health Department requires a 100-foot separation distance be maintained between water wells and animal feeding operations (NASDA, 1997).

Land Application Requirements

Minnesota Rules part 7020.04000 requires manure to be land applied at agronomic rates so as not to exceed local agricultural crop nutrient requirements. If manure is not used as fertilizer, the feedlot owner must apply to MPCA for a Five-Year Permit.

9.0 Number of AFO/CAFO facilities permitted

Of an estimated 45,000 feedlots in Minnesota, 24,800 have been permitted (USEPA, 1998).

MPCA issued 841 feedlot permits to livestock operations in 1996 (MPCA, 1997c). According to

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EPA's Permit Compliance System (8/97), 22 individual NPDES permits, three of which are expired, have been issued to animal feeding operations.

10.0 Enforcement

Minnesota has carried out 36 enforcement actions in 1997 (USEPA, 1998).

11.0 Inspection Programs

Agena (1994) reported that although inspections are infrequent and primarily complaint driven, some facilities must submit annual manure disposal records to the state. EPA (1998) reports that there are 1,000 inspections a year. Also, site appraisals are required before development.

12.0 Support

In 1994, MPCA had eight full time staff dedicated to the feedlot unit (Agena, 1994). In 1998, there were 21 FTE (USEPA, 1998).

13.0 Case Studies/Innovative Programs

The MPCA is revising Minnesota's animal feedlot rules to adopt a more risk-based approach to permitting. These new proposals include identifying feedlots that are within shorelands. The rule is to be completed by June 1999.

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Currently, there are no odor control rules, but a task force convened by the *Feedlot and Manure Management Advisory Committee* made recommendations for the development of an odor rating guide to be used by counties when regulating livestock confinement areas.

The MPCA gave public notice of its intent to develop and issue NPDES general permits for feedlots operating with more than 1,000 animal units in early 1997. On the recommendation of the *Feedlot Manure Management Advisory Committee*, MPCA withdrew the General Permit from public comment after initial public comment indicated that the General Permit would be contested. Currently, MPCA is revising the General Permit language to address issues brought forth by the public and may place the NPDES General Permit on public notice again (MPCA, 1997b).

The 1998 Legislature mandated that the General permit for feedlots over 1,000 A.U. will be issued by Oct 1, 1999.

14.0 References

Agena, Ubbo. 1994. Animal Waste Control Programs of Iowa and Eight Other States. Iowa Department of Natural Resources, Environmental Protection Division.

National Association of State Departments of Agriculture (NASDA). 1997. Summary Matrix of State Survey on Waste & Manure Management Regulations.

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[November 18, 1997].

Minnesota Pollution Control Agency. 1997b. General Feedlot Program Information. Fact Sheet

33 posted on World Wide Web, July 1997.

Minnesota Pollution Control Agency. 1997c. A 1997 Legislative Update: MPCA Feedlot

Program Overview. February 4, 1997.

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated

Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions

Compiled by G. Beatty, EPA, Office of Water, Washington, D.C.

Background

Missouri has experienced an increase in large hog and poultry operations. The growth of the facilities has created resentment from small farm advocates. In 1995, a series of spills from two of the largest hog operations in the state led to legislation passed in 1996 that requires the Missouri Department of Natural Resources (MDNR) to strengthen its CAFO regulatory program (USEPA, 1998).

1.0 Lead Regulatory Agency

Missouri Department of Natural Resources (MDNR) enforces and administers the water pollution control program.

2.0 Lead Agency for Voluntary Programs

Department of Natural Resources has a technical assistance program.

3.0 Other State Agency Involvement

Missouri Department of Agriculture regulates dead animal disposal.

4.0 State Statutes/Regulations Regarding AFO

Missouri's Clean Water Law.

Operations

5.0 State Voluntary Programs

EQIP and State revolving loans (NASDA, 1997).

6.0 Type of Permits

NPDES

The State of Missouri administers the NPDES Permitting Program. Missouri issues individual NPDES permits to CAFOs and provides authorization under a general NPDES permit.

Other

Construction and operating permits are issued to livestock facilities under the Missouri Clean Water Law (ASIWPCA, 1997).

7.0 Permit Coverage

In general, all CAFOs must receive NPDES permits or be covered under the general permit. Also, poultry facilities that do not meet the federal definition of a CAFO must seek NPDES coverage (USEPA, 1998). The State of Missouri developed a classification scheme for concentrated animal feeding facilities based on capacity. This allows managers to develop/apply regulations based on

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size and potential impact of a concentrated animal feeding facility. The three classes of animal feeding operations in Missouri are:

Class IA - Any concentrated animal feeding operation with a capacity of 7,000 animal units or more.

Class IB - Any concentrated animal feeding operation with a capacity of at least 3,000 animal units, but less than 7,000 animal units.

Class IC - Any concentrated animal feeding operation with a capacity of at least 1,000 animal units, but less than 3,000 animal units.

Class II - Any concentrated animal feeding operation with a capacity of at least 300 animal units, but less than 1,000 animal units.

Class IB, IC and Class II animal feeding operations are covered under Missouri's general NPDES permit. Class IA facilities must seek an individual NPDES permit. All Class I facilities are subject to state construction and operating/permitting requirements. Permits are not required for operation of less than 300 animal units when the operation uses best management practices approved by the MDNR.

8.0 Permit Conditions

Approvals

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State construction and operating approval are required for facilities with more than 1,000 animal units (Agena, 1994). Also, public notice is required for Class IA facilities and the owner/operator must issue neighbor notices before expanding animal feeding operations. Voluntary letters of approval can be issued at a facilities request.

Lagoon Design and Specifications

Storage structures must have between 90 and 365 day capacity depending on location and agronomic condition of the application site (NASDA, 1997). A site appraisal by design engineer is required to ensure that earthen storage structures are constructed to have at least 4 feet distance between lagoon bottom and groundwater (NASDA, 1997) and to keep lagoon seepage to 1/8 to 1/16 inch a day based on pollution potential of waste control facility (Agena, 1994).

For wet waste handling facilities that MDNR deems a risk to any drinking water supply or aquatic life, or is within 300 feet of an adjacent landowner, must have a containment structure that can contain a minimum volume equal to maximum flushing in any twenty-four hour period (640.730). All wet animal waste handling facilities are required to have an automatic shut off in the event a pipe becomes blocked (RSMo 640.725).

Discharge Rules

No discharge allowed for Class I facilities outside of a 24 hour, 25 year storm event.

To receive construction approval, an applicant must include a waste handling plan (RSMo 640.715).

Separation Distances

All new animal waste control facilities must be 1,000 to 3,000 feet from any public building or residence depending on the facility's capacity (NASDA, 1997). Operations with at least a 1,000 animal unit capacity must be 1,000 feet from dwellings, Class IB and IA facilities must maintain a separation distance from public buildings and residences of 2,000 and 3,000 feet, respectively. A 50-foot separation distance between property line is mandated for all storage facilities and land application (NASDA, 1997)

Animal waste control facilities constructed after June 30, 1996 must be 300 feet from water wells (NASDA, 1997).

Class IA feeding operations are prohibited in Outstanding Natural Resource Water National River areas and their watersheds (ASIWPCA, 1997).

Land Application Requirements

Land application based on agronomic nitrogen requirements, but higher rates of application are allowed if the land available for waste disposal is limited (Agena, 1994). Before waste can be land

applied, geological investigations are required to assess the risk of contaminating groundwater (ASIWPCA, 1997).

Operator Training and Certification

The MDNR requires waste system operators to be trained and certified (NASDA, 1997). Missouri regulations classify CAFO waste management system operators into four categories (10 CSR 20-14.010):

- CAFO supervisors,
- CAFO assistant supervisors,
- CAFO operator, and
- CAFO operator trainee

Each category of operator is defined by level of experience and knowledge of waste management system operation. The MDNR issues a certificate of competency to CAFO operators after successful completion of course work and receiving a passing score on a state exam.

9.0 Number of AFO/CAFO facilities permitted

As of 1995, MDNR had listed 251 different CAFOs with 1,000 animal units or more under their permit, letter of agreement, and complaint files. Among this group there were 7 beef, 73 swine, 38 laying hen, 117 chicken broiler, and 16 turkey facilities. In 1998, there are 299 operations covered under the NPDES general permit (USEPA, 1998). Thirteen swine facilities and 7 laying hen facilities were categorized as Class IA facilities. Sixteen swine facilities were class IB facilities.

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There are currently 16 active individual NPDES permits issued to CAFOs with more than 7,000 animal units in Missouri (USEPA, 1998; EPA Permit Compliance System 8/97).

There are 2,500 small operations, which do not require a permit, with a letter of approval (USEPA, 1998).

10.0 Enforcement

In 1996, nine enforcement actions resulted in \$560,000 in fines. In 1997, 13 enforcement actions resulted in \$129,00 in fines (USEPA, 1998).

11.0 Inspection Programs

Operators of any “flush” manure management system (i.e., any system that uses liquid as primary agent for moving manure) must visually inspect the waste handling facility and lagoons for unauthorized discharges at least every 12 hours and maintain a record of each inspection (General Assembly of the state of Missouri House Bill 1207, 1288, 1408, and 1409).

In compliance with House Bills Nos. 1207, 1208, 14089, and 1409 MDNR conducts routine on-site inspections (NASDA, 1997). Class IA facilities are inspected quarterly, while other animal feeding operations receive annual inspections (USEPA, 1998). In 1997, 259 inspections were completed at permitted facilities and 49 at smaller operations (USEPA, 1998)

12.0 Support

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In 1994, Missouri had six full time staff members dedicated to animal waste control programs (Agena, 1994). Today, MDNR has 10 FTEs assigned to the livestock program (USEPA, 1998).

13.0 Case Studies/Innovative Programs

The Concentrated Animal Feeding Operation Indemnity Fund was established to fund closure of abandoned concentrated animal feeding operations.

14.0 References

Agena, Ubbo. 1994. Animal Waste Control Programs of Iowa and Eight Other States. Iowa Department of Natural Resources, Environmental Protection Division.

Association of State and Interstate Water Pollution Control Administrators (ASIWPCA). 1997. CAFO Standards for Pork Production, Survey. December 1997. ASIWPCA Washington, D.C.

National Association of State Agriculture Departments (NASDA). 1997. Summary Matrix of State Survey on Waste & Manure Management Regulations.

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions Compiled by G. Beatty, EPA, Office of Water, Washington, D.C.

U.S. Environmental Protection Agency. 1993. The Report of the EPA/State Feedlot Workgroup. Office of Wastewater Enforcement and Compliance, Washington, D.C.

Background

Agriculture is Mississippi's number one industry, employing over 30% of state's workforce and being valued at \$4.6 billion. In 1996, there were over 685 million broiler chickens produced in the state and poultry/egg production was a \$1.35 billion industry. Mississippi has about 1.2 million head of cattle, which includes 700,000 mature cows. The production and sale of meat animals was worth \$275 million to the state in 1996. Mississippi's 450 dairy farms and three commercial dairy processors are valued at \$110 million, making dairy products among the state's top commodities (Mississippi Department of Agriculture and Commerce 1997). The growth of swine and poultry facilities in Mississippi is creating concerns for potential impacts to water quality (USEPA, 1998).

1.0 Lead Regulatory Agency

Mississippi Department of Environmental Quality, Office of Pollution Control, Surface Water Division administers the wastewater programs and enforces the NPDES requirements.

2.0 Lead Agency for Voluntary Programs

Unidentified.

3.0 Other State Agency Involvement

Unidentified.

4.0 State Regulations Regarding AFO

Wastewater Regulations for National Pollutant Discharge Elimination System (NPDES) Permits
Amended August 24, 1995.

In 1998, the Mississippi legislature issued a two-year moratorium on permits from CAFO
submitted after February 1998.

5.0 State Voluntary Programs

The Nonpoint Pollution Control Program is a technical outreach program that addresses pollution
caused by rainfall runoff from agriculture and other sources. The program focuses on educational
and technical exchange. Through this program several best management practices have been
developed for controlling nonpoint source pollution.

6.0 Type of Permits

NPDES

Mississippi is a delegated state and has the authority to issue individual and general NPDES
permits (I. Linville, EPA Region 4, pers. com., 1997).

State individual and general *Animal Waste Permits* are issued to smaller facilities (i.e., facilities that fall outside of the Federal CAFO definition).

7.0 Permit Coverage

All CAFOs that meet the federal regulatory requirements of 40 CFR Part 122.23 must apply for an NPDES permit. Any facility that causes pollution to waters of the state requires an individual permit or must seek coverage under a general permit.

All animal feedlots, Grade A dairies, poultry operations with 9,000 or more birds, swine operations with 10 or more sows or 50 or more swine, that have been constructed or significantly altered since August 1979 need a permit.

8.0 Permit Conditions

Approvals

To apply for a state animal waste disposal permit or seek coverage under a general permit, all CAFOs that do not meet the federal regulatory requirements of 40 CFR Part 122.23 must submit a waste treatment/disposal design worksheet and request an on-site inspection. On-site inspections and waste treatment/disposal design worksheets are required before permitting to ensure compliance with siting criteria.

Unidentified

Discharges

State Animal Waste Permits prohibit discharges except those caused by 24-hour, 25-year rainfall event.

Waste management plans

Unidentified

Separation Distances

Any facility designed for the treatment and disposal of animal wastes or the housing of confined animal growing operations (except for broiler poultry operations that generate dry litter and do not use continuous overflow watering system) must be at least 1,000 feet from nearest unowned occupied dwelling or commercial establishment and at least 300 feet from the adjoining property line. Broiler pullets, broiler breeders, and broilers in a poultry operation that generate dry litter must be 600 feet from nearest unowned occupied dwelling or commercial establishment and at least 150 feet from the adjoining property line. In the event that buffer zone requirements cannot be met the Permit Board can consider requests for an exception or variance from the requirements (Mississippi Department of Environmental Quality Office of Pollution Control 1995).

Land application of animal waste (excluding dry litter waste) must be at least 50 feet from the nearest adjoining property line and at least 300 feet from the nearest unowned occupied dwelling.

Land application of dry litter must be at least 25 feet from the nearest adjoining property line and at least 150 feet from the nearest unowned occupied dwelling (Mississippi Department of Environmental Quality Office of Pollution Control 1995).

9.0 Number of AFO/CAFO facilities permitted

Mississippi has issued approximately 60 individual NPDES permits (USEPA, 1998; I. Linville, EPA Region 4, pers. com., 1997; EPA Permits Compliance System 8/97). There are approximately 1,500 AFO state issued permits.

10.0 Enforcement

Unidentified.

11.0 Inspection Programs

Each NPDES permitted facility is inspected once a year (I. Linville, EPA Region 4, pers. com., 1997). The state conducted approximately 60 inspections in FY 1998 (USEPA, 1998).

12.0 Support

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Mississippi has approximately 1.5 FTEs dedicated to AFOs/CAFOs, additional funds are expected to be provided in the new budget for AFO management (USEPA, 1998).

13.0 Case Studies/Innovative Programs

Unidentified.

14.0 References

Linville, I. Environmental Protection Agency, Region 4. Summary of state program information sent to Ruth Much (SAIC), Fall 1997.

Mississippi Department of Agriculture and Commerce. [Online]. Mississippi Agriculture at a Glance. Mississippi Department of Agriculture and Commerce's Home Page. Available: <http://www.mdac.state.ms.us/#index>. [December 12, 1997].

Mississippi Department of Environmental Quality Office of Pollution Control. 1995. Wastewater Regulations for National Pollutant Discharge Elimination System (NPDES) Permits. Amended August 24, 1995.

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions Compiled by G. Beatty, EPA, Office of Water, Washington, D.C.

1.0 Lead Regulatory Agency

Montana Department of Environmental Quality enforces the Montana Pollution Discharge Elimination System program (MPDES). The requirements of the MPDES, as they apply to CAFOs, mirror the requirements of the NPDES program, plus additional limitations on discharges to ground water.

2.0 Lead Agency for Voluntary Programs

Montana Department of Environmental Quality, Prevention, Planning and Assistance Division

3.0 Other State Agency Involvement

Montana Department of Livestock

Montana Department of Fish, Wildlife and Parks (Game Farms)

4.0 State Statutes/Regulations Regarding AFO

State Statute: Montana Water Quality Act 75-5-101

Administrative Rules of Montana (ARM) 17.30.1301 et seq.: Montana Pollution Discharge Elimination System (MPDES) permit and ARM 17.30.1001 et seq.: Montana Groundwater Pollution Control System (MGWPCS).

5.0 State Voluntary Programs

Technical Assistance is available from Montana State University Agricultural Extension

6.0 Type of Permits

NPDES

Montana is authorized to administer the Federal NPDES Program. Applicants for a water discharge permit must apply for a Montana Pollution Discharge Elimination System (MPDES) permit. The Montana Department of Environmental Quality has a general MPDES CAFO permit (USEPA, 1998).

Other

A Montana Groundwater Pollution Control System permit may be required instead of a MPDES permit.

7.0 Permit Coverage

A permit is required to construct, modify, or operate a disposal system or to construct and use any outlet for discharge of industrial wastes into state waters. CAFOs, as defined by 40 CFR Part 122 Appendix B, are required to obtain a MPDES permit.

Approvals

Applications for permits must be filed 180 days prior to the operation of a point source. An applicant must provide the permitting authority with waste disposal system plans and specifications and process and waste flow diagrams.

Lagoon design and specifications

The general NPDES CAFO permit is classified as a non-discharging permit (USEPA, 1998).

The maximum lagoon seepage allowed per year is six inches.

Discharge rules

No discharge allowed except in the event of a 25-year, 24-hour storm.

Waste Management plans

Applicability is determined on a case-by-case basis.

Separation distances

Identified on a case-by-case basis.

Land application requirements

Land application must be done in accordance with agronomic rates.

9.0 Number of AFO/CAFO facilities permitted

Approximately 72 CAFOs are permitted under a Montana MPDES General Permit. Three CAFO operations are covered under groundwater permits.

10.0 Enforcement

Discharges in exceedence of groundwater standards or discharges resulting from precipitation events less than the 25-year, 24-hour storm are considered for enforcement.

11.0 Inspection Programs

Complaint driven inspections resulted in 20 to 30 inspections a year (USEPA, 1998).

12.0 Support

There is less than 1 FTE for the state (USEPA, 1998).

13.0 Case Studies/Innovative Programs

Groundwater Quality Tracking

14.0 References

Montana Department of Environmental Quality. [Online]. About the Montana Pollution Discharge Elimination System. Montana Department of Environmental Quality Home Page. Available: <http://www.deq.mt.gov/ped/wpb/program.htm>. [December 12, 1997].

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions
Compiled by G. Beatty, EPA, Office of Water, Washington, D.C.

Background

In 1996, North Carolina hog farmers produced an estimated 3.5 billion pounds of live hogs valued at \$1.8 billion, making North Carolina second in the nation in hog production. Between 1993 and 1996, hog production in North Carolina increased by 69 percent (Zerring 1997). This recent explosive growth of the animal farming industry, particularly hog farming, has lead the North Carolina General Assembly to reexamine the effect of intensive animal feeding operations on the state. As such, the Clean Water Responsibility and Environmentally Sound Policy Act (House Bill 515) established a moratorium on the construction or expansion of swine farms within North Carolina for two years so policy makers could determine how to manage intensive feeding operations.

The discussion below includes permitting requirements before the moratorium was enacted and permitting requirements due to passing of House Bill 515.

1.0 Lead Regulatory Agency

The North Carolina Division of Water (housed within the Department of Environment Health and Natural Resources) administers the permitting program and operates a mandatory training and certification program for animal waste management system operators (I. Linville, Region 4, pers. com., 1997).

2.0 Lead Agency for Voluntary Programs

Conservation.

3.0 Other State Agency Involvement

Unidentified.

4.0 State Regulations Regarding AFO

The Clean Water Responsibility and Environmentally Sound Policy Act (House Bill 515) established a moratorium on construction or expansion of swine farms within North Carolina for two years. Between 1 March 1997 and 1 March 1999 permits cannot be issued to new or expanding swine facilities. This act removed swine farms from being exempt from county zoning ordinances and now counties can adopt zoning regulations governing swine farms with waste management systems with a 600,000 pound capacity. The moratorium was adopted to allow counties time to adopt zoning ordinances that can address intensive feeding operations and allow time for the completion and review of agricultural studies previously authorized by the General Assembly.

Effective 1 March 1999, animal waste management systems cannot be issued a general permit and must be issued an individual permit if in a county that 1) has a population of less than 75,000, 2) in which there is more than \$150 million of expenditures for travel and tourism and, 3) that it is not in the coastal area.

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North Carolina Administrative Code Section: 15A NCAC 2H.0200 - Waste Not Discharged to Surface Waters - defines the permitting rules for animal waste management systems.

5.0 State Voluntary Programs

Administered by the North Carolina Division of Soil and Water Conservation, North Carolina's Agriculture Cost Share Program for Nonpoint Source Pollution Control was established in 1989 as a statewide program to protect water quality. The program pays a farmer up to 75 percent of the average cost of implementing approved BMPs and provides technical assistance to landowners. Local Soil and Water Conservation District Boards identify treatment areas, allocate resources, sign contractual agreements, and provide technical assistance. Participation by the local Soil and Water Conservation Districts is considered crucial to the success of the program.

6.0 Type of Permits

NPDES

Although North Carolina is a delegated state and authorized to issue NPDES permits, North Carolina has opted not to issue NPDES permits to CAFOs. Rather, North Carolina has developed its own water quality permitting program (Whittle 1996).

Other

North Carolina Division of Environmental Health and Natural Resources established a general nondischarging permit for swine waste operations and other livestock facilities. Although a general

permit has been established, individual permits may still be required if the state determines that a facility poses significant risk or threat to the environment. All intensive animal feeding operations that meet the threshold described below are subject to North Carolina's nondischarge permitting rules.

7.0 Permit Coverage

In North Carolina, permit coverage is much more stringent than the federal standards that cover intensive feeding operations. Since 1993, intensive animal feeding operations with animal waste management systems designed to serve more than the following animal populations: 100 head of cattle, 75 horses, 250 swine, 1,000 sheep, or 30,000 birds with a liquid waste system are required to obtain a permit. Operations with less than the above thresholds are automatically deemed permitted and are not required to obtain an approved waste management plan (Whittle 1996). Construction or operating an animal waste management system without a permit is prohibited in North Carolina.

Swine operations are covered under the Swine Waste Operation General Permit (Issued January 14, 1997 and effective till December 31, 2001) if no wastes are discharged to surface waters (except for unintentional discharges from a 25-year, 24-hour storm event) and a Certified Animal Waste Management Plan (CAWMP) is submitted to Division of Water Quality.

8.0 Permit Conditions

Approvals

New or expanding farms must undergo a site appraisal before beginning development projects (NASDA 1997) and develop a Certified Animal Waste Management Plan (CAWMP) before stocking animals (NCDEHNR Swine Waste General Permit).

A Certificate of Coverage (COC), issued under the Swine Waste Operation General Permit, authorizes swine facilities to operate under the conditions set forth in the CAWMP.

Lagoon Design and Specifications

New waste storage structures must have a 180-day capacity, 1 to 2 feet of freeboard, and be constructed so not to be inundated by a 100-year flood.

Seepage is restricted to 1/28 inch per day (NASDA 1997).

Discharge Rules

No wastes can be discharged to surface waters except the unintentional releases resulting from a 25-year, 24-hour storm event.

Waste Management Plans

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North Carolina adopted the NRCS's technical guidelines, and all intensive feeding operations subject to state law must comply with these guidelines in developing their animal waste plans.

A Certified Animal Waste Management Plan (CAWMP) is required for all swine facilities issued a Certificate of Coverage under the Swine Waste Operation General Permit and must include the following components (Article 21 Chapter 143 of the General Statute §143-215.10C):

- A list of potential odor sources and a choice of site-specific best management practices to minimize those sources.
- A list of potential insect sources and a choice of site-specific best management practices to minimize those sources.
- Provisions for acceptable methods of disposing of dead animals.
- Provisions for best management practices for riparian buffers, particularly along perennial streams.
- Provisions for testing waste products used as nutrient sources as close to the time of land application as practical (at least within 60 days), and at least annual inspections of soils where waste will be applied.
- Provisions regarding waste utilization plans that assure a balance between nitrogen application rates and nitrogen crop requirements.

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- Provision for completing and maintaining records as required by the state.

Separation Distances

Intensive swine feeding operations must typically be 1,500 feet from any occupied residence; 2,500 feet from schools, churches, and hospitals; and 500 feet from property lines. When spraying fields with animal waste, a minimum separation distance of 75 feet is required from property lines and 500 feet from water wells (NASDA 1997). A swine house or lagoon can be below the separation distance requirements if written approval from the neighboring is recorded with the state. If a permit is required, swine farm operators must inform all adjoining neighbors before construction or modifications of swine farms begin.

Land Application

Land application sites do not require a separate permit if waste is applied at agronomic rates and a vegetative buffer of at least 25 feet is maintained from perennial waters.

Operator Training Requirements

Since 1995, every waste management facility must have a trained and certified operator of animal waste management systems.

9.0 Number of AFO/CAFO facilities permitted

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There are approximately 4,000 hog, chicken, and other animal farms in North Carolina (Warrick 1995). Permits have been issued to 737 of the 2,842 facilities that require permitting in the state (USEPA, 1998).

10.0 Enforcement

Any facility that directly discharges waste from a lagoon (through a pipe or overflow) or fails to control storm water runoff from a storm event less intense than the 25-year, 24 hour storm is in violation of regulation 15A NCAC 2H.0122-.0123. Although grace periods allow operators time to control discharges and avoid penalties, particularly for first time offenders, fines can be assessed immediately for willful discharges or violations of water quality standards (NCDEM 1993).

Civil and/or criminal penalties of up to \$10,000 per day and/or imprisonment can be assessed for violations of water quality standards and illegal discharges. Fines for first violations of willful discharges do not exceed \$5,000 unless water quality standards are violated (NCDEM 1993).

In 1996, North Carolina Department of Environmental Health and Natural Resources assessed civil penalties and sought injunctive relief against more than ten intensive feeding operations. Two intensive feeding operations face criminal charges (Whittle 1996).

11.0 Inspection Programs

New and expanded facilities require an on-site inspection to confirm animal waste treatment systems have been constructed to meet the appropriate standards (North Carolina Administrative Code Section: 15A NCAC 2H.0200). Also, North Carolina Department of Environmental

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Management (NCDEM) inspects animal waste facilities in response to citizen complaints or obvious water quality problems (Agena 1994; NCDEM 1993). Two regular inspections are conducted each year. One is a compliance inspection performed by the Division of Water Quality and the other a technical assistance inspection performed by the Division of Soil and Water Conservation (USEPA, 1998; I. Linville, Region 4, pers. com., 1997; Thompson 1997).

12.0 Support

The 1992 annual statewide budget for the BMP cost share program with landowners was approximately \$6.7 million (NCDEM 1993).

13.0 Case Studies/Innovative Programs

A Violation Points System applicable to permits for animal waste management systems for swine farms is being developed in North Carolina. Violations that cause the greatest harm will receive the greatest number of points and the number of points added to an operator's permit will be directly related to negligence or willfulness. The number of points that will result in revocation of a permit is to be decided.

14.0 References

Agena, Ubbo. 1994. Animal Waste Control Programs of Iowa and Eight Other States. Iowa Department of Natural Resources, Environmental Protection Division.

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Update: A Pro Bono Initiative. Office of the Secretary, North Carolina Department of
Environment, Health, and Natural Resources.

Zerring, K. 1997. Economic Impacts of the Pork Industry in North Carolina. White paper by
Kelly Zerring Associate Professor in Department of Agriculture and Resource Economics at
North Carolina State University.

1.0 Lead Regulatory Agency

North Dakota State Department of Health.

2.0 Lead Agency for Voluntary Programs

North Dakota Department of Health and Nonpoint Source Pollution Task Force in coordination with North Dakota State University Extension Service.

3.0 Other State Agency Involvement

Unidentified.

4.0 State Regulations Regarding CAFO

Chapter 33-16-03 Control of Pollution from Certain Livestock Enterprises.

5.0 State Voluntary Programs

In January 1997, The U.S. Environmental Protection Agency (USEPA) approved \$357,500 for a Livestock Waste Technical Information and Assistance program using Section 319 grant money. This will allow North Dakota State University Extension Service to develop a statewide information and education program to inform livestock producers about implementing manure

management practices. Information and education assistance will be provided to ongoing Section 319 projects with livestock waste management components and an engineering extension specialist will be hired to lead the program (North Dakota Nonpoint Source Pollution Task Force 1997).

6.0 Type of Permits

NPDES

North Dakota is a NPDES delegated state.

Other

Construction approval is required for new operations, and the Department of Health must review and approve all facilities with over 200 animal units (USEPA, 1998).

7.0 Permit Coverage

The following categories of animal feeding operations require permit approval (Chapter 33-16-03):

- All concentrated feeding operations that handle 200 or more animal units (North Dakota's definition of animal units is less restrictive than the Federal definition).
- All feedlot operations located in the three-year flood plain and that handle at least 100 animal units, and operations less than two feet per animal unit from nearest water of the state.

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- Any concentrated feeding operation, regardless of its location or number of animals, if the North Dakota Department of Health determines that the facility has caused or is likely to cause water pollution.

North Dakota defines concentrated feeding operations or feedlots as 1) any livestock feeding, handling, or holding operation in an area not normally used for pasture or growing crops and where animal waste may accumulate, or 2) where the space per animal unit is less than 600 square feet.

8.0 Permit Conditions

Approvals

Any operator of a confined animal feeding operation, as describe above, must seek approval for waste handling operations or to discharge from a point source.

Lagoon Design and Specifications

There must be a 180 day storage capacity and capacity to hold waste during a 25-year, 24-hour storm event (USEPA, 1998).

Discharge Rules

Unidentified.

Waste Management Plans

A plan for water pollution control facilities addressing how pollution will be controlled is required if the Department of Health determines that a facility is likely to cause pollution. This plan must be developed based on guidelines provided by the Department or other acceptable design criteria.

Separation Distances

Unidentified.

Land Application Requirements

Agronomic rates.

9.0 Number of AFO/CAFO facilities permitted

Although it was recently reported that there are no CAFOs covered under NPDES permits in North Dakota (USEPA, 1998), according to EPA's Permit Compliance System (8/97) one facility has been issued a NPDES permit. North Dakota has reviewed over 1,000 livestock waste systems since 1972. Presently, there are 420 livestock facilities in the state that have been approved by the Department of Health (USEPA, 1998).

10.0 Enforcement

Unidentified.

11.0 Inspection Programs

Onsite inspection may be required before issuing permits. Also, state conducts annual inspections of CAFOs (1,000 animal units or more) and other facilities on a complaint basis (USEPA, 1998).

12.0 Support

North Dakota has increased its support of CAFO related issues and now has 1.5 FTE working on CAFO activities (USEPA, 1998).

13.0 Case Studies/Innovative Programs

Unidentified.

14.0 References

Chapter 33-16-03-01 Control of Pollution from Certain Livestock Enterprises

North Dakota Nonpoint Source Pollution Task Force. 1997. Quality Water Newsletter. Volume 8, No.1, Winter 1997.

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions
Compiled by G. Beatty, EPA, Office of Water, Washington, D.C.

Background

Nebraska began its livestock permit program in 1972 and has issued NPDES permits to CAFOs since 1974. In April 1998, new legislation was passed that requires the state to develop a permit fee system, financial assurance plans, and training program for land application of wastes (USEPA, 1998). The state has a mix of very large cattle farms with a large number of smaller cattle feeding operations (USEPA, 1998). Nebraska is the second largest producer of feed cattle in the U.S.

1.0 Lead Regulatory Agency

The Nebraska Department of Environmental Quality (NDEQ) regulates discharge of livestock wastes into the waters of the state in accordance with the NPDES Program. The NDEQ also has regulatory and permitting authority over livestock waste control facilities under State Title 130, *Rules and Regulations Pertaining to Livestock Waste Control*.

2.0 Lead Agency for Voluntary Programs

Unidentified.

3.0 Other State Agency Involvement

Compendium of State AFO Programs

The State of Nebraska's Natural Resource Districts can place restrictions on a facility that go beyond NDEQ regulations if there are groundwater contamination problems (R. Summers, EPA Region 7, per. com., 1997).

The State Bureau of Dairies & Foods provides waste facility location approval (USEPA, 1993).

4.0 State Regulations Regarding AFO

The Erosion and Sediment Control Act was adopted to control nonpoint source pollution and applies to both agricultural and nonagricultural lands. The focus of this act, however, is not directed toward controlling nonpoint source pollution from livestock operations. Rather, pollution from livestock operations is controlled by through mandating best management practices (BMPs) that require livestock waste control facilities be operated and maintained to prevent water pollution.

Chapter 2 of State Title 130, *Rules and Regulations Pertaining to Livestock Waste Control*, mandates a site inspection by the NDEQ to determine if livestock waste control facilities are required. A livestock waste control facility is required if:

- Livestock wastes violate or threaten to violate Nebraska Water Quality Standards (Title 117);
- Livestock wastes violate or threaten to violate Nebraska Ground Water Quality Standards (Title 118);
- Wastes are discharged into waters of the State; or

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- Discharges violate the Nebraska Environmental Protection Act.

Animal carcasses must be disposed of within 36 hours after receiving knowledge of the death.

Animals must be buried 4 feet below the surface (NASDA Research Foundation, 1997).

New legislation passed in April 1998 increased the states regulatory control over AFOs.

5.0 State Voluntary Programs

Cost share programs in 1991 provided 17 participants with an average of \$2,300 each (\$39,100 total) to help with the construction of livestock wastewater control structures. The Nebraska Natural Resource Districts make funding decisions based on water quality concerns.

6.0 Type of Permits

NPDES

Nebraska has the authority to issue individual NPDES permits. Nebraska is currently developing a general CAFO permit (R. Summers, EPA Region 7, pers. com., 1997).

Other

Besides requiring individual NPDES permits, Nebraska Department of Environmental Quality requires livestock facilities with waste control systems to obtain construction permits before

construction begins. Operating permits are required prior to using a livestock waste control system and for irrigation systems that distribute livestock manure.

7.0 Permit Coverage

NPDES permits are required for operations that discharge wastes into waters of the state or handles the minimum number of animal units specified by Federal regulations. In general, new NPDES permits are issued based on a facility's potential to discharge wastes into waters of the state. The need for a permit can be determined on a case-by-case basis after a site inspection. No permit is required for land application of waste to cropland, but Natural Resource Conservation Service guidelines and requirements must be followed (NASDA Research Foundation, 1997). An existing or proposed livestock operation may be required to have a waste control facility after inspection by NDEQ (USEPA, 1993).

New legislation passed in April 1998 included provision that require all feedlots, regardless of size, to register with the state (USEPA, 1998).

8.0 Permit Conditions

Approvals

A site inspection is required to determine the need for livestock waste control facility, prior to permitting.

Lagoon Design and Specifications

Permit applicants are required to submit design plans that meet state technical standards and facility location requirements. Permits may require operators to meet designated waste capacity requirements, design standards, disposal requirements, and monitoring requirements.

A minimum of 180 days of storage must be available before the winter months.

Seepage limits for lagoons and earthen basins are set at 0.25 inches/day.

A check valve assembly is required to qualify for an operating permit to run an irrigation system that incorporates manure into the system. This check valve must be located between the water supply and the point of manure injection.

Discharge Rules

No discharge except in the event of a 25-year, 24-hour storm.

Waste Management Plans

Manure management plans are required prior to approval of construction permits (USEPA, 1998).

Separation Distances

A livestock waste control facility can not be within 100 feet of any well used for domestic purposes.

Land application is based on nutrient value of the wastes and soil and site characteristics.

9.0 Number of AFO/CAFO Facilities Permitted

As reported by EPA (1998 and 1993), there have been 214 individual NPDES permits and 1,100 construction permits issued to livestock facilities. Many of the 3,700 livestock operations with more than 300 animal units do not have NPDES permits because they do not discharge and do not have the potential to discharge. These facilities, however, must obtain a state permit and NDEQ has issued 1,500 operating permits to AFOs (USEPA, 1998).

10.0 Enforcement

Violations of the Nebraska Livestock Waste Control Regulations is grounds for enforcement actions and the state may seek injunctive relief. The authority to levy fines lies with the Attorney General (USEPA, 1993).

A total of 10 enforcement actions were conducted in 1996 and 1997, which resulted in collection of \$6,850 in fines (USEPA, 1998).

11.0 Inspection Programs

Preconstruction on-site inspections are required for new waste control systems. On-site inspection of large facilities occurs once a year (USEPA, 1993). The number of inspections in 1996 and

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1997 were 257 and 224, respectively. NDEQ intends to inspect facilities with more than 8,000 animal units twice a year, where as facilities with 1,000 to 8,000 animal units will be inspected annually (USEPA, 1998).

12.0 Support

Nebraska had slightly more than 4 FTE devoted to permitting livestock waste control systems until 1998 (USEPA, 1998; Avena, 1994). Currently, there are 16.5 NDEQ staff working on feedlot issues (USEPA, 1998). One staff member in the state attorney general's office is assigned to pursue cases for the NDEQ.

13.0 Case Studies/Innovative Programs

Nebraska Department of Environmental Quality staff do not seek unpermitted CAFOs. Instead, unpermitted CAFOs are identified by livestock producer organizations, which serve as the operator's primary source of waste management information. Livestock industry organizations have increased the awareness and importance of permitting process in Nebraska.

14.0 References

Avena, Ubbo. 1994. Animal Waste Control Programs of Iowa and Eight Other States. Iowa Department of Natural Resources, Environmental Protection Division.

Compendium of State AFO Programs

National Association of State Departments of Agriculture (NASDA) Research Foundation. 1997.

Environmental Laws Affecting Nebraska Agriculture.

Summers, R. U.S. Environmental Protection Agency, Region 4. Summary of state program information sent to Ruth Much (SAIC), Fall 1997.

University of Nebraska-Lincoln, Cooperative Extension, Institute of Agriculture and Natural Resources. 1996. Environmental Considerations for Manure Application System Selection. NebGuide. Electronic Version issued June 1996, G95-1266-A.

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions Compiled by G. Beatty, EPA, Office of Water, Washington, D.C.

U.S. Environmental Protection Agency. 1993. The Report of the EPA/State Feedlot Workgroup. Office of Wastewater Enforcement and Compliance, Washington, D.C.

Background

There is only 1 animal feeding facility that may meets the definition of a CAFO (i.e., 1,000 animal units) in New Hampshire (USEPA, 1998), and no NPDES permits have been issued to CAFOs within the state (Voorhees, J. EPA Region 1, pers. com., 1997).

1.0 Lead Regulatory Agency

The New Hampshire Department of Environmental Services is notified of improper manure handling practices that cannot be remedied by the Department of Agriculture and takes appropriate regulatory action.

2.0 Lead Agency for Voluntary Programs

The commissioner of the New Hampshire Department of Agriculture identifies and publishes best management practices for handing manure and investigates complaints of improper manure handling (RSA 431:34). Typically, New Hampshire animal waste management is handled at the local level through conservation districts and Natural Resource Conservation Service (USEPA, 1998).

3.0 Other State Agency Involvement

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Best management practices (BMPs) for manure management were developed in consultation with the Natural Resource Conservation Service (NRCS), New Hampshire agricultural experiment station, University of New Hampshire cooperative extension service, and the commissioner of environmental services.

4.0 State Statutes/Regulations Regarding AFO

House Bill 153 - An act to regulate the handling of manure, agricultural compost, and chemical fertilizers (RSA 431:33 through 431:35). Also, the New Hampshire Coastal Nonpoint Pollution Control Program adopted agricultural pollution management measures in accordance with Section 6217(c)(1) of the Coastal Zone Act Reauthorization Amendments of 1990.

5.0 State Voluntary Programs

Operators of confined feeding operation are to follow BMPs developed by Department of Agriculture.

6.0 Type of Permits

NPDES

New Hampshire is not a NPDES delegate state.

Other

No state permits are required.

7.0 Permit Coverage

Not applicable.

8.0 Permit Conditions

Permit conditions are not applicable. However, NRCS design standards are used in constructing manure storage facilities, including the 25-year, 24-hour storm capacity of storage ponds.

9.0 Number of AFO/CAFO facilities permitted

There are few if any large animal feeding operations in New Hampshire. No permits have been issued.

10.0 Enforcement

The commissioner of agriculture investigates complaints of improper manure handling, including improper storage and spreading. If the commissioner determines improper manure management is a nuisance and caused by failing to use BMPs, the commissioner will notify the operator of the necessary changes. If the changes cannot be made within 10 days, the operator must submit a compliance plan to the commissioner. Unresolved problems are referred to the local authorities and the commissioner of environmental services (RSA 431:35).

11.0 Inspection Programs

Complaint driven.

12.0 Support

Unidentified.

13.0 Case Studies/Innovative Programs

Unidentified.

14.0 References

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions
Compiled by G. Beatty, EPA, Office of Water, Washington, D.C.

Voorhees, J. U.S. Environmental Protection Agency, Region 1. Summary of state program
information sent to Ruth Much (SAIC), Fall 1997.

Background

The state has indicated that there are no CAFOs in New Jersey. There are, however, several permitted race tracks (USEPA 1998).

1.0 Lead Regulatory Agency

New Jersey Department of Environmental Protection

2.0 Lead Agency for Voluntary Programs

Unidentified.

3.0 Other State Agency Involvement

Unidentified.

4.0 State Regulations Regarding CAFO

New Jersey Administrative Code 7:14A-2.13 New Jersey Pollutant Discharge Elimination System (NJPDES) Specific Criteria for Concentrated Animal Feeding Operations

5.0 State Voluntary Programs

Unidentified.

6.0 Type of Permits

NPDES

New Jersey is authorized to administer the Federal NPDES program.

Other

Unidentified.

7.0 Permit Coverage

The NJPDES requires all concentrated animal feeding operations as defined in 40 Code of Federal Regulations (CFR) 122.23 and 40 CFR 122 Appendix B to obtain a permit.

8.0 Permit Conditions

Approvals

Site appraisal required before development (NASDA, 1997)

State recommend following Natural Resource Conservation Service guidelines and best management practices.

Separation Distances

No state standards, but local ordinances may apply (NASDA, 1997)

Land Application Requirements

Liquid waste must be applied at agronomic rates.

9.0 Number of AFO/CAFO facilities permitted

Unidentified

10.0 Enforcement

Complaints and routine inspections used to identify violators (NASDA, 1997)

11.0 Inspection Programs

New Jersey has not developed any formal CAFO inspection programs, although state staff have visited NPDES permitted race tracks (USEPA 1998).

12.0 Support

The state has not expended any significant time on the CAFO program (USEPA 1998).

13.0 Case Studies/Innovative Programs

Unidentified.

14.0 References

National Association of State Departments of Agriculture. 1997. State Survey on Waste and Manure Management Regulation.

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions
Compiled by G. Beatty, EPA, Office of Water, Washington, D.C.

1.0 Lead Regulatory Agency

New Mexico Environment Department.

2.0 Lead Agency for Voluntary Programs

New Mexico Environment Department and Cooperative Extension Service provide education and training.

3.0 Other State Agency Involvement

CAFO programs are coordinated with other programs through the Surface Water Quality Bureau (USEPA, 1998).

4.0 State Statutes/Regulations Regarding AFO

New Mexico Water Quality Act.

Liquid Waste Disposal 20NMAC7.3.

Ground and Surface Water Protection 20NMAC6.2

5.0 State Voluntary Programs

Unidentified.

6.0 Type of Permits

NPDES

New Mexico is not a NPDES delegated state and the U.S. Environmental Protection Agency Region 6 issues general permits to CAFOs in New Mexico.

State

The state issues a Ground Water Discharge Permit (DP) under the authority of the New Mexico Water Quality Act.

7.0 Permit Coverage

NPDES permits may be issued to facilities meeting the Federal definition of CAFO.

A New Mexico ground water DP may be required for any facility where there is discharge or activity that may affect ground water. Examples of regulated discharges from AFO's include dairy wastewater discharges to lagoons and land application areas (New Mexico Environment Department, 1997).

8.0 Permit Conditions

Approvals

Site appraisal required before development (NASDA, 1997).

New Mexico's DP requires contingency plans to address potential failures of waste management systems.

Separation Distances

No state standards for distance from dwellings or property lines. A 200 foot minimum distance from public water wells is required (NASDA, 1997).

Land Application Requirements

Based on nitrogen loading (NASDA, 1997).

9.0 Number of AFO/CAFO facilities permitted

State permits have been issued to 150 facilities, including groundwater permits (USEPA, 1998).

10.0 Enforcement

Unidentified.

11.0 Inspection Programs

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Facilities in watershed impaired by nutrients are targeted for inspection, and about 20 percent of all facilities are inspected annually (USEPA, 1998).

12.0 Support

Unidentified.

13.0 Case Studies/Innovative Programs

Unidentified.

14.0 References

National Association of State Departments of Agriculture. 1997. State Survey on Waste and Manure Management Regulation.

New Mexico Environment Department. (1997, 2 December 2). Questions & Answers about CAFO Regulations.[Online]. New Mexico Environment Department. <http://www.nmenv.state.nm.us/> [May 6, 1998].

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions
Compiled by G. Beatty, EPA, Office of Water, Washington, D.C.

Nevada's CAFO Programs

1.0 Lead Regulatory Agency

Unidentified

2.0 Lead Agency for Voluntary Programs

Unidentified.

3.0 Other State Agency Involvement

Unidentified.

4.0 State Regulations Regarding CAFO

Nevada appears to subject CAFOs to standard NPDES regulations.

5.0 State Voluntary Programs

Unidentified.

6.0 Type of Permits

NPDES

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Nevada is a delegated state.

Other

Unidentified.

7.0 Permit Coverage

Unidentified

8.0 Permit Conditions

Unidentified

9.0 Number of AFO/CAFO facilities permitted

Unidentified

10.0 Enforcement

Unidentified

11.0 Inspection Programs

Unidentified

12.0 Support

Unidentified.

13.0 Case Studies/Innovative Programs

Unidentified.

14.0 References

Unidentified

Background

Historically, New York Department of Environmental Conservation (NYSDEC) did not issue State Pollutant Discharge Elimination System (SPDES) permits under existing state and federal authority for Concentrated Animal Feeding Operations (CAFOs). This policy was based on the fact that the effluent guideline which is essentially a “zero discharge” to surface waters could be accomplished without a permit through voluntary programs augmented by existing legal enforcement authority in more severe cases.

The federal court decision in the C.A.R.E. vs. Southview Farms case and the changing nature of dairy production in New York towards fewer but larger farms, indicated that the non-regulatory approach for CAFOs may no longer be viable.

In 1996, NYSDEC formed a technical work group “CAFO Work Group” to examine all of the legal, regulatory, policy, environmental and economic issues to be considered in developing a more comprehensive approach for CAFOs. The group formulated a series of four options ranging from a total voluntary program up to implementation of all three tiers of the EPA CAFO regulations.

As a result of this process, NYSDEC decided on development of a general SPDES permit for the first two tiers of the EPA regulations (i.e., all AFO over 1,000 animal units and AFOs between 300 and 999 animal units that discharge through a man-made conveyance).

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AFOs not covered under the permit program would be steered into the voluntary program “Agricultural Environmental Management” AEM administered by the New York State Department of Agriculture and Markets.

The draft permit public notice period is from March 3, 1999 - April 14, 1999. NYSDEC is conducting four public information meetings during the notice period.

1.0 Lead Regulatory Agency

New York State Department of Environmental Conservation (NYSDEC).

2.0 Lead Agency for Voluntary Programs

New York State Department of Agriculture and Markets

3.0 Other State Agency Involvement

All of the Farm Service Agencies that operate in New York are represented on the CAFO work group and are responsible for delivering many of the programs related to CAFOs. This includes the New York State Soil and water Conservation Committee, the County Soil and Water Conservation Districts, Cornell Cooperative Extension and NRCS.

4.0 State Regulations Regarding CAFO

New York State implements the NPDES program pursuant to a 1975 memorandum of agreement with Region 2 EPA. The federal regulations and the NYS SPDES regulations apply.

5.0 State Voluntary Programs

New York “Guide to Agricultural Environmental Management in New York State”

6.0 Type of Permits

NPDES

State Pollutant Discharge Elimination System SPDES General Permit for Concentrated Animal Feeding Operations

Other

No other permits for CAFOs required.

7.0 Permit Coverage

The general SPDES permit will cover all AFOs greater than 1,000 animal units and all AFOs between 300 animal units and 999 animal units that discharge via a “man-made conveyance.”

8.0 Permit Conditions

The animal feeding operation (i.e., area where the animals are confined and organic materials are stored) must meet the EPA effluent guideline of no discharge of process wastewater to surface waters for except in storm events greater than the 25-year, 24-hour storm.

The permittee must develop and implement Agricultural Waste Management Plan (AWMP) in accordance with NRCS Conservation Practice Standard 312-NY.

Large CAFOs must develop the AWMP within 18 months after the date of coverage and must implement the AWMP within 60 months of the date of coverage.

Medium CAFOs must develop the AWMP within 24 months of the date of coverage and must fully implement the AWMP within 60 months of the date of coverage.

The AWMP must be developed or reviewed by a qualified Agricultural Environmental Management (AEM) planner.

The Permittee and the AEM planner must certify to the department that the plan has been developed in accordance with NRCS CPS No. 312-NY.

In order to legally discharge, a CAFO must file a Notice of Intent (NOI) to be covered under the general permit within 180 days of the effective date of the permit.

9.0 Number of AFO/CAFO facilities permitted

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NYSDEC and the County SWCDs conducted a survey and estimated that there are approximately 150 large facilities (>1000 AUs) and 850 medium facilities (>300-999 AUs) in New York.

10.0 Enforcement

NYSDEC will evaluate non-compliance within the existing Water Integrated Compliance Strategy System (WICSS). The CAFO work group is in the process of developing field procedures for evaluating compliance and for coordination with participating farm service agencies, criteria for priority violations and significant non-compliance are also under development.

11.0 Inspection Programs

Inspections, watershed targeting, neutral surveillance, complaint investigation, technical assistance protocols and procedures will also be developed with input from the CAFO work group.

12.0 Support

NYSDEC is currently devoting about 1.2 work years to the permit development and outreach. In the EPA “gap analysis” DEC has identified the need for 6.5 work years for a fully developed and implemented program.

13.0 Case Studies/Innovative Programs

New York State Department of Agriculture and Markets has instituted a program to train and qualify Agricultural Environmental Management Planners. This is one element of the AEM

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program which is an innovative process of tiered evaluation of environmental risks and development and implementation of best management practices to minimize or eliminate those risks.

14.0 References

Dimura, J. New York State Department of Environmental Conservation

Background

In Ohio, there are approximately 56,000 farms with livestock. Of those farms, 156 are CAFO's with more than 1,000 animal units (AUs). The number of AFOs with 300-999 AUs is 1,869 (U.S. EPA, 1998).

1.0 Lead Regulatory Agencies

The Animal Waste Pollution Abatement Program is administered by the Ohio Environmental Protection Agency (OEPA) and the Ohio Department of Natural Resources (DNR) Division of Soil and Water Conservation. OEPA is responsible for permitting livestock operations with 1,000 animal units (AUs) or more, or operations of any size that directly discharge to waters of the state. The Division of Soil and Water Conservation addresses pollution problems from operations with fewer than 1,000 AUs, which are not required to obtain permits (Hutchinson, 1996).

2.0 Lead Agencies for Voluntary Programs

DNR Division of Soil and Water Conservation offers voluntary compliance assistance and water pollution prevention programs. Other resources for livestock operators are available through voluntary programs administered by the Ohio State University Extension Service, The Natural Resources Conservation Commission, Ohio Department of Agriculture, Ohio Department of Development, and OEPA Division of Surface Water (Hutchinson, 1996).

3.0 Other State Agency Involvement

Unidentified.

4.0 State Regulations Regarding Livestock Operations

Ohio Revised Code (OR) 6111 prohibits the controlled discharge of waste directly into state waters and gives OEPA the authority to regulate such discharges (Veenhuizen et al.). Livestock facilities are impacted by the ODNR Division of Soil and Water Conservation's Agricultural Pollution Abatement Authority (ORC 1515 & 1511 and OAC 1501:15-5-01 through 18) and Ohio's Stream Litter Act (ORC 1531.29), which specifies that any person putting wastes into Ohio's waters may be guilty of a violation (Hutchinson, 1996). Wild animals of the state are protected by ORC 1531.02 and 1531.04 (Veenhuizen et al).

5.0 State Voluntary Programs

Ohio producers are encouraged to voluntarily control pollution of state waters and they have several options for resource information. ODNR, local Soil and Water Conservation Districts (SWCDs), and Ohio State University participate in the Manure Nutrient Management (MNM) program. This program is an intensive educational program that teaches operators how to collect, handle, store, and apply manure. The program also instructs operators on how to test manure and soil (specific tests were not identified by Veenhuizen et al.). Local SWCDs receive project grants from the ODNR Division of Soil and Water Conservation. Projects are funded for 4 years and provide seed money to establish permanent positions. At one point, there were 22 SWCDs in 31 livestock counties of the state. Nine innovative demonstration projects totaling \$98,883 were approved for funding (Ohio's Agricultural Pollution Abatement Program).

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In addition to its participation in MNM, ODNR coordinates the activities of SWCDs, and runs the Agricultural Pollution Abatement (APA) programs. ODNR Division of Soil and Water Conservation administers the Pollution Abatement Cost Sharing Program for voluntary implementation of APA. Projects are planned and approved by local SWCD Field Offices. The cost-share program annually uses \$850,000 to install best management practices (BMPs) to abate pollution by sediment and animal waste. Landowners can recover 75% of their cost up to \$7,500 dollars per year.

The Ohio State University Agriculture Extension Agents and specialized teams share their expertise in environmental issues and manure management at local county extension offices.

Through the Ohioline World Wide Web site, the extension service offers useful online information about livestock production, the environment, and permit and voluntary programs. For example, a copy of *Guidelines for Livestock Producers - Animal Wastes and the Environment* is available at www.ag.ohio-state.edu/~ohioline/glp/glp_2.html.

Ohio EPA-Division of Surface Water provides information, education and assistance with Ohio EPA regulatory activities associated with animal waste. They assist in watershed planning, deliver financial and technical assistance, and help with local water quality monitoring activities. Ohio EPA activities are funded through Section 319 of CWA and Ohio Water Pollution Control Loan Fund. Funding for operators is available through OEPA Water Pollution Control Loan Fund (WPCLF). Federal Section 319(h) funds are available to support local watershed-based non-point source projects (Hutchinson, 1996).

Other agencies are involved in Ohio's voluntary programs. USDA Natural Resources Conservation Service (NRCS) administers conservation programs and provides technical, research,

educational and financial assistance to farmers through the ODNR and SWDCs. The Ohio

Department of Development (ODD) helps farmers with site evaluation and selection for livestock expansion projects (Hutchinson, 1996).

6.0 Types of Permits

NPDES

Ohio is delegated to issue NPDES permits. The general permits developed to date are not specific for CAFOs (Jann, Region 5, pers. com., 1997).

Facilities that make controlled discharges may apply for an NPDES wastewater permit that sets limits on the amount of pollutants that can be discharged. A facility with more than 1,000 AUs may also require an NPDES storm water permit if any clearing, grading or excavating of more than five acres is conducted.

Other

CAFOs are required to apply for an installation permit. The installation permit is only required for new, modified, renovated, or expanding livestock waste treatment/disposal systems to serve 1,000 AUs or more (Hutchinson, 1996).

There are no permitting requirements for facilities with less than 1,000 AUs, but operators may be subject to civil penalties for discharging directly into state waters.

7.0 Permit Coverage

The NPDES wastewater and storm water permit requirements, and the state installation permit apply to all facilities with 1,000 AUs or more. The NPDES wastewater permits also cover facilities that directly discharge to state waters regardless of facility size. If more than 5 acres are cleared, excavated or graded then the NPDES storm water permit is required regardless of AUs.

Regardless of AUs, installation permits are required for sanitary waste facilities if they are not separate from animal wastes and from combined sanitary animal waste treatment facilities.

Installation permits can be thought of as construction permits for new, modified, renovated or expanding livestock waste treatment/disposal systems designed to serve 1,000 AUs or more.

Facilities with fewer than 1,000 AUs, that do not have a controlled discharge, and have any construction sites smaller than 5 acres and no restrooms separate from the residence, are not required to obtain permits from Ohio EPA (Hutchinson, 1996).

8.0 Permit Conditions

Approvals

There are three types of approvals that may be obtained in Ohio: the NPDES permit, the installation permit, and the livestock waste management plan.

Lagoon Design and Specifications

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Storage capacity for earthen lagoons is 180 days, and storage capacity for concrete lagoons is 120 days.

Discharge Rules

Unidentified.

Waste Management Plans

The livestock waste management plan is approved through an installation permit. The management plan must include discussion of waste collection, treatment, and disposal; volume of waste produced, manure analysis results, and application rate calculations; site maps and soil descriptions; discussion of land application management; sample sales contract; manure and soil sampling schedule; and record keeping and reporting requirements.

Separation Distances

Storage tanks must be at least 100 feet from wells, cisterns and springs. Lagoons, feedlots and stacked manure must be at least 200 feet away from wells, cisterns and springs. Application of liquid manure has to be at least 200 feet from wells and occupied buildings, while manure solids must be applied at least 200 feet from wells and occupied buildings and 25 feet from ponds or streams (Jones and Sutton, 1996).

Nitrogen application is based on crop needs for facilities with 1,000 AUs or more. Facilities with less than 1,000 animal units apply manure based on the phosphorus needs of the crops. It is recommended that liquid manure is applied on slopes 6 percent. A slope of 12 percent is recommended for solid manure application. If a slope is 20 percent, manure must be incorporated into soil. Timing of manure application is based on weather and soil conditions (Jones and Sutton, 1996).

9.0 Number of CAFO Facilities Permitted

Ten facilities are covered by NPDES permits for sanitary and “process” water. Manure management is not addressed by those permits. Ohio has issued 100 state Permits-to-Install/Plan Approvals (U.S. EPA, 1998).

10.0 Enforcement

The Chief of the Division of Soil and Water Conservation has the authority to enforce state standards for animal pollution abatement.

Violators of animal pollution abatement standards are given the opportunity to resolve problems informally by responding to a formal warning letter from the appropriate OEPA district office before being referred to the Ohio Attorney General’s Office for prosecution. Facilities that violate NPDES permit requirements may face civil penalties up to \$10,000 for each day of the violation (Ohio Revised Code 6111.07) and criminal penalties up to \$25,000 and/or one year in prison (Ohio

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Revised Code 6111.99). In the interest of protecting wildlife, DNR Division of Wildlife may also charge individuals and companies that pollute state waters with violations of the Stream Litter Act. Violations are heard in criminal court where a judge can levy fines up to \$500 and give 60 day jail sentences to an individual, or give fines up to \$3,000-\$5,000 to corporations (Hutchinson, 1996). If animals are killed as a result of the pollution, violators may also be required to pay the value of the animals killed (Veenhuizen et al).

From July 1997 to 1998, eleven CAFO-related enforcement actions have been taken in Ohio (U.S. EPA, 1998).

11.0 Inspection Programs

OEPA and SWCD perform joint site inspections upon receiving a Site Inspection Request from operators/owners for proposed operations involving 1,000 AUs or more. OEPA investigates complaints about the prohibited discharges of wastes from any size facility directly into state waters (Ohio Revised Code 6111), be it accidental or deliberate.

The state conducted 6 inspections in 1994. Another 30-50 inspections are planned for July 1, 1998 through June 30, 1999.

12.0 Support

There are four FTE handling AFO and CAFO issues.

Unidentified.

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http://www.ag.ohio-state.edu/~ohioline/b604/b604_30.html [1997, September 23].

Background

The primary CAFO/AFO issues in the state are socioeconomic issues related to adverse impacts of CAFOs and AFOs on the lifestyles and public health of local residents. Another important issue is the beneficial economic impact of CAFOs and AFOs on local economies. Siting of facilities is key in solving most potential problems. The Region's Cumulative Risk Index Analysis was developed with assistance from industry, local citizens groups and others to help resolve some of the potential problems. Oklahoma is concerned about growth of the swine industry in the panhandle resulting in documented and/or suspected air and water quality impacts. The state is concerned also about growth of the swine industry, ground water vulnerability and documented cases of ground water contamination in north-central Oklahoma. The eastern part of Oklahoma faces documented and/or suspected water quality impacts due to growth of the poultry industry (U.S. EPA, 1998).

1.0 Lead Regulatory Agency

Oklahoma Department of Agriculture's Water Quality Services Division is responsible for preventing wastes generated by animal feeding operations from polluting Oklahoma waters. However, CAFO delegation of the NPDES program to Oklahoma in 1996 excluded CAFO regulatory authority. Region 6 has primary NPDES/CAFO enforcement authority.

2.0 Lead Agency for Voluntary Programs

Oklahoma Conservation Commission - Nonpoint Source

3.0 Other State Agency Involvement

The Governor's Animal Waste and Water Quality Protection Task Force, formed by Executive Order 97-07 in April 1997, was involved in the regulatory process as advisors to the Governor.

The 15-member Task Force included private citizens and state agency representatives. An action plan was issued on December 1, 1997 which included recommendations for legislation, regulatory change, structural and operational change, private-public partnerships, incentives, and other measures.

The Office of Secretary of the Environment receives EPA CWA grants and passes these monies to other State agencies and programs. The Office also coordinates interagency meetings to address CAFO and AFO efforts.

4.0 State Regulations Regarding AFO

The Oklahoma Concentrated Animal Feeding Operations Act and allied rules outline the enforceable requirements of CAFOs and gives the Oklahoma Department of Agriculture regulatory authority over Oklahoma's CAFO program. Oklahoma regulations may be more stringent than the Federal regulations. The Oklahoma Concentrated Animal Feeding Operations Act (CAFO), as created by House Bill 1522 and amended by Senate Bill 1175 was designed to protect Oklahoma's water and air supplies by restricting CAFOs. The bill requires presite approval from the Department of Agriculture and requires the Department to monitor the construction of facilities and their liquid waste retention structures. The statute addresses setbacks, public hearings, pre-site approval, mandatory licensing, operating and construction standards, a pollution prevention plan, a

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waste management plan, annual inspections of licensed facilities, mechanisms for wildlife protection, property rights, and safety checks on irrigation systems.

A moratorium on swine prohibited the processing and issuance of new state licenses until August 1998. Senate Bill 1175 amends HB 1522 and affects swine AFO location restrictions, waste storage, land application and requires swine operators to attend mandatory education courses. SB 1175 also provides for a fee of 80 cents per animal unit of swine to pay for regulatory costs.

Senate Bill 1170 targets dry litter poultry operations to control runoff from land application and allow for proper collection, storage and disposal of animal waste. Senate Bill 1170 encourages transfer of waste out of designated sensitive watersheds.

5.0 State Voluntary Programs

To achieve it's goal of protecting and sustaining the environment, the Agriculture and Natural Resources section of the Oklahoma Cooperative Extension Service helps farmers to understand new CAFO regulations and offers advice on nutrient management. Some federally funded programs offered by the extension service are the Hydraulic Unit Area Demonstrations (to show impact of BMPs), Contaminant Loading Program, and various sediment programs (targeted at construction). The Oklahoma Farm and Ranch*A*Syst program (protects water wells and ground water), and the Oklahoma*A*Syst program (protects groundwater) are other programs that may be benefit livestock producers. They provide educational programs and demonstrations that develop Best Management Practices. The state provides education and training on the proper maintenance of facility. Where applicable, USDA EQIP funding is used as an incentive for good practices.

6.0 Types of Permits

NPDES

EPA Region 6 issued a general NPDES permit that covers Oklahoma CAFOs. Oklahoma has added its own buffer zone requirement to the general permit. The Region 6 CAFO general permit was issued on March 10, 1993 and expired March 10, 1998. The Region plans to reissue the general permit after revision and public comment.

Other

Legislation signed by Governor Frank Keating in 1997 and 1998 make licensing of Licensed Managed Feeding Operations (LMFOs) mandatory. State licenses are required for roof covered facilities using a liquid waste management system with more than 1,000 animal units of swine. Licenses are also required for discharges other than those related to 25-year, 24-hour storm events. Smaller facilities that are found to discharge or pollute may be required to obtain the license as well.

7.0 Permit Coverage

The NPDES general permit issued by Region 6 covers CAFOs with 1,000 AUs, or those with 300-1,000 AUs that discharge through a man-made conveyance or directly into state waters.

Oklahoma requires state CAFO licenses for facilities that fall under one of the following four categories:

Category 1

- Swine and poultry primarily housed in roof-covered structure
- Use liquid waste management system
- >1000 AUs on swine or poultry farms
- Discharge or no discharge

Category 2

- AFO with >1000 AUs AND any discharge

Category 3

- AFO with >300 animal units AND discharge with artificial device OR discharge directly into state water on facility (diffuse flow may be exempt)

Category 4

- Designated by Oklahoma Department of Agriculture as a significant contributor to pollution of state water (NASDA, 1997; U.S. EPA, 1998).

To receive a state license, a facility must first be an AFO defined as a facility with no vegetation or pasture and confining animals for 90 consecutive days in a 12-month period.

Poultry facilities may be subject to regulation if:

- Poultry are kept at the facility 45 days or more per year
- crops or vegetation are not sustained at the facility
- the facility produces more than 10 tons of poultry waste per year.

State licenses have no effect on EPA NPDES CAFO permits (U.S. EPA , 1998). However, any facility which holds the EPA NPDES CAFO general permit is required to obtain an Oklahoma CAFO license.

8.0 Permit Conditions

Approvals

Site appraisals are required by facilities to receive coverage under the general NPDES permit and by the state before the development of waste retention structures. A new license is required prior to expansion for LMFOs that want to expand 5 or more percent.

Lagoon Design and Specifications

Developers are required to follow specific design standards. Waste retention structures must provide 21 days of storage, have a 1- to 2-foot freeboard, and control runoff from 25-year 24-hour storm. Liners can be natural, geomembrane or synthetic material. Allowable lagoon seepage is 10⁻⁷ cm/sec or NRCS Technical Note 716 rates. LMFOs must provide for 180 days of storage.

Discharge Rules

The Region 6 CAFO NPDES general permit carries a 24-hour/25-year discharge limit.

Waste Management Plans

Department of Agriculture approval of a pollution prevention plan and an animal waste management plan is required. The pollution prevention plan shall include: a description of potential sources of pollutants in facility runoff; a site map or topographic map outlining the drainage area of the CAFO; a list of significant material used, stored or disposed of on the CAFO, sampling data; a description of the management controls including structural and nonstructural controls, retention facility capacity, and design standards; a schedule for liquid waste removal; a permanent marker showing the volume required for a 25-year rainfall event within containment ponds; assurance that construction and design is in accordance with good engineering practices; evidence that no significant hydrologic connection exists between surface and groundwater; identity of areas that have a high potential for erosion; periodic dates for employee training; and the name of the person responsible for inspection and record keeping.

Poultry statutes and rules require all poultry operators producing more than ten (10) tons of poultry waste to obtain and implement animal waste management plans and register with the Oklahoma Department of Agriculture.

Separation Distances

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The state requires waste structures to be separated 1 mile from 10 or more occupied residences, 3 miles from city limits or state parks, and 1/4-2 mile setback depending on area and size. There are no standards for separation distance from property lines. Waste facilities must be at least 300 feet from public or private drinking water wells. Ten feet must separate the bottom of waste structures from the maximum elevation of ground water (NASDA, 1997). Other setbacks are required for nonprofit camp or recreational sites, Oklahoma Scenic Rivers, Oklahoma historic property or museums, Outstanding Resource Waters, National and State parks, and public drinking water wells and surface waters. The general NPDES permit issued in Oklahoma includes a buffer zone requirement.

Land Application Requirements

Nitrogen application is based on crop needs, not to exceed crop uptake. To protect groundwater, irrigation systems shall have safety check valves, an anti-syphon vent, a low pressure escape drain and an interlock device to prevent operation of the waste pump (NASDA, 1997).

Poultry facilities must apply at nitrogen crop uptake, but must not exceed USDA NRCS Waste Utilization Standards for phosphorus.

Other Requirements

Odor abatement plans must be developed by swine facilities to avoid unnecessary and unreasonable odors. Annual soil and water tests are required to monitor excess accumulation of phosphate and

nitrates in waste application and retention areas. Operators are required to use certain BMPs (NASDA, 1997).

Poultry statutes and rules require all operators producing more than ten (10) tons of poultry waste to conduct soil and litter testing. The producers attend mandatory education equivalent to 9 hours the first year and 3 hours each year thereafter (U.S. EPA, 1998).

9.0 Number of CAFO Facilities Permitted

Seventy-four individual NPDES permits have been issued by Region 6. All 74 are now expired. Based on NEPA reviews of mostly new facilities, Region 6 recommends that 50 facilities be covered by the expired NPDES general permit (U.S. EPA, 1998).

About 330 facilities currently hold State licenses (U.S. EPA, 1998). Approximately 930 poultry operations are currently registered with the Oklahoma Department of Agriculture.

10.0 Enforcement

Region 6 has authority to levy fines. Operators that violate the Oklahoma Concentrated Animal Feeding Operations Act may face fines up to \$10,000 per day per violation or imprisonment in county jail for up to 6 months per violation. A person who is convicted of making a false statement may be found guilty of a misdemeanor and fined up to \$10,000 for each violation.

The state CAFO license provides a defense for license holders in civil nuisance suits (U.S. EPA, 1998).

11.0 Inspection Programs

Routine onsite annual inspections, complaints and unannounced inspections are used to identify violators. Some unpermitted CAFOs are identified through meetings and public hearings regarding permit availability. The State of Oklahoma performs regular inspections of permitted and licensed CAFOs and conducts complaint-driven inspections of other AFOs. HB 1522 and SB 1175 expressly gives the Department of Agriculture the right to make annual, unannounced facility inspections. The NPDES permit requires annual facility inspection by the permittee (Office of Governor, June 1997; U.S. EPA, 1998).

EPA Region 6 conducted NEPA review for about 50 animal facilities (U.S. EPA, 1998).

12.0 Support

There was only 1 FTE staff person devoted to Region 6 CAFO program by 1993 (U.S. EPA, 1993). Currently, the Department of Agriculture has 7 inspectors and 5 FTEs devoted to CAFOs and AFOs with two contract technical staff members. Three part-time professional scientists work on CAFO and AFO projects (U.S. EPA, 1998).

13.0 Case Study/Innovative Programs

Oklahoma LMFOs are required to develop odor abatement plans and pest management plans.

14.0 References

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<http://www.state.ok.us/osfdocs/nr5197a.html> [1997, November 26]

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Background

The state of Oregon is in the process of developing the "Oregon Plan" which is a plan designed to foster cooperation between industry and government to clean up water quality limited streams. The development of the Oregon Plan is in response to the threat of the listing of certain species of salmon as endangered species. Concentrations of several small animal feeding operations (operations with less than 1000 animal units) have been identified as major causes of water quality problems in certain watersheds. In fact, of the 580 facilities permitted in the state, only 30 operations are greater than 1000 animal units.

1.0 Lead Regulatory Agencies

Oregon's Confined Animal Feeding Program began in the early 1980s. Confined animal feeding operations (CAFOs) in Oregon are regulated by the Oregon Department of Agriculture (ODA) Natural Resources Division. Though the CAFO program has been run "from the top down" by ODA since 1993, the Oregon Department of Environmental Quality (DEQ) had authority to issue and enforce permits throughout most of the program's history, while ODA administered the program and investigated complaints (Searle, 1998).

2.0 Lead Agencies for Voluntary Programs

Education, training and technical assistance programs are available from NRCS, soil and water conservation districts (SWCDs), Oregon's extension, service and private engineers (NASDA, 1997).

3.0 Other State Agency Involvement

Unidentified.

4.0 State Regulations Regarding CAFOs

Farmers are required to obtain permits to construct, install, modify, or operate a CAFO wastewater containment or disposal system under ORS 468B.050. ORS 468.140 originally gave ODA and DEQ authority to enforce CAFO regulations. OR Senate Bill 1008 gave the ODA authority to administer the entire CAFO program beginning in 1993 (Searle, 1997).

CAFOs are exempted by state law from air quality regulation. They may be required to observe land use compatibility laws, Oregon Safety and Health Administration rules, and food sanitary and safety requirements (NASDA, 1997).

5.0 State Voluntary Programs

State programs have not been identified. At the Federal level, Oregon farmers who intend to construct farm wastewater containment systems are encouraged to enroll in USDA/FSA cost-sharing programs. Federal cost-share programs are used to encourage good practices.

The Oregon Department of Agriculture has been involved in education and outreach that includes explaining the EQIP process to producers (U.S. EPA, 1998).

6.0 Types of Permits

NPDES

Oregon is authorized to administer the federal NPDES permit program.

Other

All Oregon CAFOs that have wastewater containment or disposal systems and confine animals for at least 4 out of 12 months must obtain coverage under a comprehensive general Water Pollution Control Facility (WPCF) permit (CAFO General Permit 800). The WPCF permit bases the maximum number of animals that can be confined at a facility on the capacity of the wastewater treatment system specified on the permit. CAFO's cannot exceed the maximum by more than 10 percent or 25 animals, whichever is greater. Though the modified permit, which was issued on October 8, 1990, has no expiration date, it may be modified or revoked by DEQ.

CAFOs that handle all manure in the dry state and prevent dry manure from getting into water systems are exempt (though a permit may be required if the facility has other wastewaters). The conditions of the general permit are as follows:

- the wastewater containment system must be sufficient to contain wastewater when it cannot be safely applied to cropland;
- all manure and (various forms of) wastewater must be contained during the winter and applied to cropland at agronomic application rates during the summer;

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- and written approval of detailed plans and specifications must be obtained from ODA before constructing or modifying wastewater control facilities.

ODA Natural Resources Division issues another state permit for construction or modification of CAFOs. Individual permits may be required to protect groundwater.

7.0 Permit Coverage

The WPCF permit is required for any CAFO with a wastewater system including dog kennels that confines animals for 4 months or more out of a 12-month period. Oregon's definition for "confined animal feeding operations" as it appears on the permit does not specify an animal unit threshold.

The NPDES general permit does not include activities covered by an individual WPCF permit until that permit has expired or been canceled. (A person may request to have the individual permit canceled as long as the activity is covered by the general permit.)

8.0 Permit Conditions

Approvals

A site appraisal is required before development.

CAFOs are required to follow a specific design standard for waste management systems. The standards are found in “Guidelines for the Design and Operation of Animal Waste Facilities” (ORS 340.051). Lagoons should be designed to hold maximum accumulated rainfall and manure runoff from the entire collection area for the maximum period of accumulation. Liner materials vary based on the situation. Lagoon seepage allowed is 10^{-7} cm/sec or 1/8 foot/day. A 2-foot freeboard satisfies storage capacity requirements (NASDA, 1997).

Discharge Rules

Unidentified.

Waste Management Plans

Unidentified.

Separation Distances

Separation distances from dwellings and property lines are determined by local land use ordinances. Wells must be 100 feet from the feedlot. There are no state standards regarding distance between waste structures and groundwater (NASDA, 1997).

Land Application Requirements

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Application of waste must not exceed annual agronomic rates. Waste water must be dissipated by evaporation (NASDA, 1997). Slurries that are applied by a tank wagon or truck should be spread uniformly. Liquid manure irrigation systems have to operated according to a predetermined plan of rotation to insure that coverage is uniform. Adequate land for the effective assimilation of manure slurry must be provided year-round. Solid animal waste must also be applied to the land uniformly. Solids should not be over applied, or deposited where it may be washed away into surface water drainage.

Other Requirements

Operators may be required to use BMPs (Searle, 1997). Dead animals must be disposed of by approved methods.

9.0 Number of CAFOs Permitted

Three individual permits were issued in Oregon. All have expired (Permit data from EPA Permit Compliance System - 8/97).

10.0 Enforcement

ODA has the authority to assess civil penalties for permit violations and to levy fines for failure to obtain appropriate permits. Oregon DEQ also plays a role in enforcement and may assess certain penalties against violators.

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Three kinds of enforcement actions are described by ORS 603.074.0040. These are the Notice of Noncompliance, the Plan of Correction, and the Notice of Civil Penalty Assessment. Each of these documents are issued by the Director of the State Department of Agriculture, must be in writing, and must be served to violators personally or through certified or registered mail. The Notice of Compliance notifies the owner or operator of a CAFO that a permit violation has occurred. It must reference the particular statute, administrative rules or order involved, where the violation occurred and when the violation occurred. The notice of violation also includes the steps that the owner or operator may take to correct the problem and suggests a reasonable time frame for doing so. A Plan of Correction states the actions that must be taken by an owner or operator to eliminate a violation and a schedule for accomplishing the requirements. Failure to correct the problems may result in the issuance of a Notice of Civil Penalty. A person receiving a Notice of Civil Penalty may request a hearing.

Producers have the opportunity to negotiate remedial actions with ODA and Oregon DEQ for permit violations. The State of Oregon does take action against animal production operators that violate the terms of their permits and pollute the waters of Oregon. CAFOs will be fined \$500 for not having a permit when it is required. A \$1,000 annual inspection fee in lieu of the \$25 fee will be assessed for three years if an operator has been assessed a civil penalty by DEQ (CAFO General Permit 800).

11.0 Inspection Programs

ODA has the authority to inspect CAFOs for compliance under a 1987 statute. Violators are identified through complaints, aerial surveys, and periodic inspections. Routine on-site inspections are not required. To determine which CAFOs were a priority for scheduled ground inspections,

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fly-overs were implemented in the Tualatin River Basin. Fly-overs continue to be used as a tool for prioritization in other watersheds of Oregon.

Inspection in the State of Oregon consist of announced inspections. Joint inspections conducted by Oregon Department of Agriculture and U.S. EPA are unannounced. While announced inspections are routine, joint inspections typically occur during wet weather conditions. In past years, an average of 30 joint inspections have been conducted annually. Most Oregon CAFOs are dairies, and the bulk of inspected facilities are dairies (U.S. EPA, 1998).

12.0 Support

In 1987, the CAFO program was staffed by two people. Limited staffing was a factor in Oregon's decision to perform flyovers. Ground inspections are performed with the help of local Soil and Water Conservation District (SWCD) representatives (Searle, 1997). Currently, the number of staff working on CAFO issues is equivalent to 5.25 FTE (U.S. EPA, 1998).

13.0 Case Study/Innovative Programs

Unidentified.

14.0 References

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Compiled by G. Beatty, U.S. EPA, Office of Water, Washington, D.C.

1.0 Lead Regulatory Agency

The State Conservation Commission and the Department of Environmental Protection have authority to regulate the state's concentrated animal operations (CAFOS) under Pennsylvania's Title 25.

2.0 Lead Agency for Voluntary Programs

USDA-NRCS, its associated State agencies, certified planners and conservation districts provide technical and educational support to CAFO operators (PA State CAFO Standards Survey Response, 1997).

3.0 Other State Agency Involvement

Unidentified.

4.0 State Regulations Regarding CAFOS

Waste management requirements for concentrated animal operations (CAFOS) are given by Title 25, Chpt.83, Subchapter D; The Clean Streams Law (35 P.S. §§691.1691.1001); and the Nutrient Management Act (3 P.S. §§17011718) passed May 20, 1993. Agricultural status exempts CAFOS from air quality regulation. CAFOS have to obey state wetlands regulations.

5.0 State Voluntary Programs

Facilities that are below the animal equivalent unit (AEU) threshold that defines CAFOS may voluntarily prepare nutrient management plans under the Nutrient Management Act (Act 6).

Nutrient management plans and runoff controls are required for facilities that have 2 AEU/acre/year or more.

6.0 Types of Permits

NPDES

Pennsylvania is authorized to administer the NPDES program. Pennsylvania has not yet issued any general or individual permits, though the state has authority to do so (Letzkus, 1997).

Other

The State of Pennsylvania currently does not require CAFOS to obtain a permit. A general permit requiring a nutrient management plan and manure storage are proposed for facilities with more than 1,000 AUs or 2,000 pounds of animals/acre (PA State CAFO Standards Survey Response). Nutrient management plans are already required for all existing large CAFOS having 2 or more AEU/acre. Plans are submitted to the State Conservation Commission.

CAFOS that are located in special protection areas may need to apply for individual permits.

Some operators may be exempted from obtaining an individual permit for manure storage facilities

and land application if design and operation are in accordance with practices in *Manure*

Management and Environmental Protection.

7.0 Permit Coverage

Individual permits are required for facilities with more than 1,000 AUs or 2,000 pounds of animals/acre.

8.0 Permit Conditions

Approvals

Before development, a registered engineer must approve the site and site-specific waste storage designs based on USDA-NRCS standards and specifications.

Lagoon Design and Specifications

Design must follow NRCS standards. Any liner that meets NRCS seepage rate standards and specifications is acceptable. SNTC Technical Note 716 gives lagoon seepage allowances.

State/Federal storage capacity requirements are a 1-foot freeboard for earthen ponds and a 0.5-foot freeboard for concrete/steel structures. Waste structures must provide storage until land is available for application (PA State CAFO Standards Survey Response, 1997). A separate permit from the Department of Agriculture for manure storage facilities is not required if the storage facility is built and operated as under approved management practices described in *Manure Management for Environmental Protection*.

Discharge Rules

Unidentified.

Waste Management Plans

A nutrient management plan is required and should at a minimum comply with §83.223 through §83.234 and §83.251 through §83.281 of the Pennsylvania Statutes. Some components of the plan are as follows:

- identification of agricultural operations and acreage (operator name, address and telephone number; counties of land included, watersheds of land included, total acreage of operation, total acreage on which nutrients are applied; number of AEUs per acre; name of nutrient management specialist preparing the plan);
- a summary of the nutrient management plan (application rates, proper disposal, existence of a conservation plan, other appropriate BMPs);
- manure management; storm water runoff controls;
- and an implementation schedule; and
- excess manure utilization plans.

Separation Distances

There are no separation distance standards pertaining to dwellings. Title 25 places limitations on how close facilities can be constructed to property lines, wells, and waterbodies. Manure storage facilities must be 100-300 feet from a property line, 100-200 feet from a private well, 100-400 feet from a public well, and 100-200 feet from streams and sinkholes. The distance placed between waste structures and groundwater and land requirements are based on nitrogen uptake (PA State CAFO Standards Survey Response, 1997).

Land Application Requirements

Application of nutrients is discussed in the manure management plan. Land application is based on nitrogen uptake by the crop and the water infiltration rate of soil (PA State CAFO Standards Survey Response, 1997). Land application of manure may not require a permit if land application systems are built in accordance with practices described in *Manure Management for Environmental Protection*.

9.0 Number of CAFOS Permitted

Unidentified.

10.0 Enforcement

Unidentified.

11.0 Inspection Programs

Inspections are generally complaint-driven. Violations are also discovered during random compliance checks conducted by authorized program staff and tri-annual reviews. Reviews are conducted by certified planners who must evaluate and report on the operations consistency with the plan (PA State CAFO Standards Survey Response, 1997).

12.0 Support

Unidentified.

13.0 Case Study/Innovative Programs

Unidentified.

14.0 References

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1.0 Lead Regulatory Agency

Rhode Island Department of Environmental Management (DEM) emphasizes a watershed-based approach to assess water pollution problems. They may develop an approach to CAFOs as part of their FY 1999 Water Pollution Control Work Plan. Currently CAFOs are addressed on a case-by-case basis. CAFOs are declining in Rhode Island and are not considered to be significant polluters to water quality violations (Voorhees, Region 1, pers. com., 1997).

2.0 Lead Agency for Voluntary Programs

Unidentified.

3.0 Other State Agency Involvement

Rhode Island Department of Agriculture investigates complaints about farms.

4.0 State Regulations Regarding CAFOs

Rhode Island Pollution Discharge Elimination System.

5.0 State Voluntary Programs

Unidentified.

6.0 Types of Permits

NPDES

Rhode Island administers the NPDES through the issuance of state RIPDES permits.

Other

Unidentified.

7.0 Permit Coverage

AFOs are identified on a case-by-case basis and through the 1,000 AU threshold (Voorhees, Region 1, pers. com., 1997). A significant point discharge may prompt the state to treat an operation as a CAFO (Voorhees, Region 1, pers. com., 1997).

8.0 Permit Conditions

Unidentified.

9.0 Number of CAFOs Permitted

Unidentified.

10.0 Enforcement

Unidentified.

11.0 Inspection Programs

Investigations are complaint-driven.

12.0 Support

Unidentified.

13.0 Case Study/Innovative Programs

Unidentified.

14.0 References

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1.0 Lead Regulatory Agency

The South Carolina Department of Health and Environmental Control is given authority by the SC Pollution Control Act to promulgate regulations regarding South Carolina's animal feeding operations.

2.0 Lead Agency for Voluntary Programs

Clemson University in conjunction with the South Carolina Department of Health and Environmental Control has developed a manure manager's training program which is voluntary for operator's of all animal operations except large swine facilities (3,000 or more finishing hogs). This program was mandated by the SC Confined Swine Feeding Operations Act of 1996 for owner's of swine facilities. Clemson University and the South Carolina Department of Health and Environmental Control encourage all owners of animal feeding operations regardless of size o obtain certification under this program.

3.0 Other State Agency Involvement

None

4.0 State Regulations Regarding CAFOs

Compendium of State AFO Programs

South Carolina has been regulating animal operations since the mid 1960s. The SC Pollution Control Act (PCA) defines “sewage” to include animal waste while the definition of “other waste” includes dead animals. The PCA requires a permit before a discharge to the environment (surface or ground water) may occur and it also requires a written permit before any new waste treatment or handling system at an animal operation may be built or operated.

In 1996, SC Confined Swine Feeding Operations Act was enacted. This State statute deals primarily with large swine facilities and includes provisions for public notice requirements, consideration of cumulative impacts, lagoon design, setbacks from property lines, waters of the State (excluding ephemeral and intermittent streams), potable wells, etc. Provisions for regulation of odors and other “nuisances” are included in the law.

SC regulation 61-43, entitled “Standards for Permitting of Agricultural Animal Facilities,” governs the permitting of commercial animal growing operations. These State regulations give the permit requirements, the administrative permit process including public notice, specific design criteria, and setbacks for animal operations. In general, all commercial animal feeding operations with 30,000 pounds or more of normal production animal live weight at any time must be permitted by the South Carolina Department of Health and Environmental Control.

5.0 State Voluntary Programs

Like other southeastern state programs, South Carolina’s AFO program is implemented with technical assistance the US Department of Agriculture’s Natural Resource Conservation Service. Clemson University and the cooperative extension service have a variety of programs for the

agricultural community. Farmers are also encouraged to seek help from the national Agriculture Compliance Assistance Center.

The extension service encourages farmers to take advantage of a variety of voluntary programs offered by the private sector. For example, John Deere sponsors a program called Managing Non-point Source Pollution in Agriculture. State Home*A*Syst (Home Assessment System) and Farm*A*Syst (Farm Assessment System) are voluntary programs that are offered nationwide. Poultry producers may get help from the Poultry Water Quality Consortium, while the Dairy Network Partnership offers assistance to dairy producers. The Manure Management Demonstration Project emphasizes record-keeping, milking center waste disposal and manure management.

6.0 Types of Permits

NPDES

South Carolina is authorized to administer the Federal NPDES program, and may issue general and individual NPDES permits. South Carolina does not issue NPDES for animal feeding operations since lagoons or other waste handling systems at all animal operations are designed to store all manure, normal rainfall, and the twenty-five year, twenty-four hour storm event generated between land applications and maintain one foot of freeboard. Surface water discharges from animal waste systems are not allowed under any circumstances. Therefore, any discharge to surface waters is a violation of State law. However, the PCA excuses certain violations if they are out of the control of the permittee such as violations caused by an act of God, riot, war, etc.

South Carolina issues an individual state “no-discharge” permit to each animal growing operation based on the review of a site specific agricultural waste management plan. The plan is normally prepared by the US Department of Agriculture’s Natural Resource conservation service (NRCS). The plan consists of the method of handling, storing, treatment (if necessary), and utilization or disposal of the manure, litter, and dead animals generated at the facility. A crop management plan, vector abatement plan, odor abatement plan, soil monitoring plan, ground water monitoring plan (if required), manure sampling plan, and emergency plan are all included in the Waste Management Plan.

7.0 Permit Coverage

While South Carolina does not issue NPDES permits for animal feeding operations, all commercial animal feeding operations (except ranged operations) are required under the State program to have and implement a waste management plan. The program has a tiered permitting approach as follows:

Facilities with 10,000 pounds or less of normal production animal live weight must have and implement a waste management plan that complies with SC regulation 61-43. The plan does not have to be submitted for approval unless specifically required by the South Carolina Department of Health and Environmental Control.

Facilities with 10,000 pounds and less than 30,000 pounds of normal production animal live weight must have and implement a waste management plan that complies with SC regulation 61-

43. The plan must be submitted but a permit is not required unless specifically required by the South Carolina Department of Health and Environmental Control. Facilities with 30,000 pounds and more of normal production animal live weight must have and implement a waste management plan that complies with SC Regulation 61-43. Before construction and operation may begin, the plan must be submitted to the South Carolina Department of Health and Environmental Control for review and permit issuance.

8.0 Permit Conditions

Public Notice Requirements

An applicant proposing to construct a new or expand an existing animal growing operation is required to notify nearby property owners of their intent to construct a new agricultural facility or expand an existing agricultural facility. All permit issuances are public noticed by the South Carolina Department of Health and Environmental Control by placing the decision in a newspaper of general circulation in the area of the facility.

Lagoon Design and Specifications

All lagoons must be designed to NRCS design standards. Some specific criteria from the SC regulations are:

- Lagoons can not be located in the 100 year flood plain unless protected from flooding as provided for in regulations of the Federal Emergency Management Agency and the National Flood Insurance Program on Floodplain Management.

- All lagoons or storage ponds must be provided with a liner, designed with permeability rate of 10^{-6} cm/sec or less. Lagoons at large swine facilities must be lined with a combination of natural and synthetic material.
- Lagoons must have the volume to be able to store the manure, normal rainfall, and the twenty-five year, twenty-four hour storm event generated between land applications and maintain one foot of freeboard.
- Ground water monitoring wells must be placed around lagoons at large swine facilities. Other facilities are evaluated on a case-by-case basis to determine the need for ground water monitoring.
- Before construction of a lagoon, all under-drains that are within twenty-five (25) feet of the toe of the proposed dike must be removed.
- Lagoons must be operated in a manner so that proper water levels are maintained at all times specific.

Discharge Rules

Discharges are prohibited in any situation. All manure generated, normal rainfall, and the twenty-five year, twenty-four hour event contained in a lagoon or other waste handling system must be land applied at agronomic rates as fertilizer to crops grown. Before a State “no-discharge” permit may be issued, the applicant must show there is enough crop land to utilize the contents of the lagoon between land applications. This ensures no discharge to surface waters will occur. South Carolina considers any discharge to surface waters as a violation of the state permit, the PCA, and the Federal Clean Water Act.

Waste Management Plans.

To obtain a state permit, the operator must first request a preliminary site inspection. After preliminary site approval, the operator must submit an application package which consists of the following:

- Application
- Waste Management Plan Containing:
 - a. Animal Management System Description
 - b. Design Calculations and Construction Details for treatment/storage structure, including exact location and design information.
 - c. Concentration of Waste Constituents
 - d. Crop Management Plan
 - e. Type of Waste Transport/Spreading Equipment (if applicable)
 - f. Spray Irrigation System Specifications and details (if applicable)

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- g. Waste Utilization Area Information and Maps
- h. Soils Information (maps & descriptions)
- i. Location Maps (showing facility, treatment/storage structure, and all fields)
- j. Copy of Tax Map (identifying all property owners within 1,000 feet of property line with names and addresses)
- k. 100 year floodplain locations
- Groundwater Monitoring Well Program & Details (if applicable)
- Odor Abatement Plan
- Vector Abatement Plan
- Method of Dead Animal Disposal
- Soil Monitoring Plan
- Plans & Spec for all other treatment or storage structures (composter, stacking shed, etc.)
- Notices of Intent from all property owners within 1,000 feet of property line
- Emergency Plan
- Contracts for contract disposal of dead animals or waste (if applicable)
- Site Approval Letter & Map
- Setback Waivers
- Alternate technology proposal (if applicable): specifications and a detailed report explaining the technology and its purpose and expected benefits.
- Application Fee
- First Year's Annual Operating Fee (must be paid before permit is issued)

If sufficient comments are received, a public hearing or public meeting will be held. After review of the application package, a decision is made on permit issuance or denial. For permit issuances, the decision is placed in a newspaper of general circulation in the area of the facility.

Separation Distances

Separation distances or setbacks vary based on the type and size of animal operation. The separation distances contained in SC Regulation 61-43 are as follows:

- Swine Operations [setbacks in bold are specifically required by the 1996 Confined Swine Feeding Operations Act (Swine Bill)]

A. Barns, Stables, Pens or Growing Houses (not including lagoon, storage pond, or waste utilization areas)

1. Wells

- a. Human Drinking Water Wells - 200 feet (excluding the applicants which must be 50 feet)
- b. Animal Drinking Water Wells - 50 feet (per SC reg. 61-71)

2. Ditches

- a. **which drain to waters of the state excluding ephemeral and intermittent streams - 100 feet (Swine Bill)**
- b. which drain to ephemeral or intermittent streams - 50 feet

3. Property Lines

- a. **Large Facilities (420,000 or more lbs of capacity) - 1,000 feet (may be reduced by written waiver with adjoining property owner after recording in the county's Office of Register of Mesne Conveyance)(Swine Bill)**
- b. Small Facilities with a capacity of:
 - i. 0 to 210,000 lbs.- 200 feet

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ii. 210,000 to 420,000 lbs. - 400 feet

Note: Distances may be reduced with permission from adjoining property owner

4. Waters of the State including ephemeral and intermittent streams - 100 feet

B. Lagoons or Waste Storage Ponds

1. Wells

- a. **Human Drinking Water Wells - 500 feet (Swine Bill)**
- b. Animal Drinking Water Wells - 100 feet (per SC Reg. 61-71)

2. Ditches

- a. **Which drain to waters of state excluding ephemeral and intermittent streams - 100 feet (Swine Bill)**
- b. Which drain to ephemeral or intermittent streams - 50 feet

3. Property lines

- a. **Large facilities (420,000 or more lbs. of capacity) with a capacity of:**
 - i. **420,000 to 840,000 lbs. - 1,000 feet (Swine Bill)**
 - ii. **840,000 to 1,260,000 lbs. - 1,250 feet (Swine Bill)**
 - iii. **1,260,000 to 1,680,000 lbs. - 1,500 feet (Swine Bill)**
 - iv. **more than 1,680,000 lbs. - 1,750 feet (Swine Bill)**

Note: All distances may be reduced by written waiver with adjoining property owner after recording in the County's Office of Register of Mesne Conveyance. (Swine Bill)

- b. Small facilities with a capacity of:
 - i. 0 to 210,000 lbs. - 300feet
 - ii. 210,000 to 420,000 lbs. - 600 feet

Note: All distances may be reduced with permission from adjoining property owner.

4. Waters of the State

- a. **Waters of the State excluding ephemeral and intermittent streams - 1,320 feet (maybe reduced to 500 feet if concrete used). However, if waters classified as ORW or Shellfish or waters are critical habitat of endangered species then 2,640 feet (may be reduced to 1,000 feet if concrete used). In both cases, if a failed safe design is utilized to prevent swine waste in the event of a lagoon failure from entering waters of the state (not including ephemeral and intermittent streams) the distances can be reduced to 500 feet. (Swine Bill)**
- b. ephemeral and intermittent streams - 100 feet

C. *Waste Utilization Areas*

1. Wells

- a. **Human Drinking Water Wells -200 feet (Swine Bill)**
- b. Animal Drinking Water Wells - 100 feet (per Reg 61-71)

2. Ditches

- a. **Which drain to waters of state excluding ephemeral and intermittent streams - 100 feet (Swine Bill)**
- b. Which drain to ephemeral or intermittent streams - 50 feet

3. Property lines

- a. **If residence on adjoining property within 1,000 feet of property line - 200 feet (maybe waived to 100 feet by consent of property owner) (Swine Bill)**
- b. If no residence within 1,000 feet of property line - none

4. Waters of the State

- a. **Waters of the State excluding ephemeral and intermittent streams - 100 feet (regardless of method of application) (Swine Bill)**
- b. Ephemeral and intermittent streams and the method application is:
 - i. Spray irrigation - 100 feet
 - ii. Incorporation - 75 feet (can be reduced to 50 feet if incorporated within 24 hours)
 - iii. Injection - 50 feet

- Other Animal Operations

A. Barns, Stables, Pens or Growing Houses (not including lagoon, storage pond, or waste utilization areas)

1. Wells

- a. Human Drinking Water Wells - 200 feet (excluding the applicants which must be 50 feet)
- b. Animal Drinking Water Wells - 50 feet (per SC Reg. 61-71)

2. Ditches - 50 feet

3. Property lines

- a. Facilities with a capacity of 1,200,000 lbs. Or less - 200 feet
- b. Facilities with a capacity of greater than 1,200,000 and less than 2,400,000 lbs - 400 feet
- c. Facilities with a capacity of 2,400,000 or greater - 600 feet
- d. Distances may be reduced with permission from adjoining property owner.

4. Waters of the State including ephemeral and intermittent streams - 100 feet

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D. Lagoons or Waste Storage Ponds

1. Wells

- a. Human Drinking Water Wells - 200 feet (excluding the applicants which must be 100 feet per SC Reg. 61-71)
- b. Animal Drinking Water Wells - 100 feet (per SC Reg. 61-71)

2. Ditches - 50 feet

3. Property lines

- a. Facilities with a capacity of 1,200,000 lbs. or less - 300 feet
- b. Facilities with a capacity of greater than 1,200,000 and less than 2,400,000 lbs. - 500 feet
- c. Facilities with a capacity of 2,400,000 or greater - 700 feet
- d. Distances may be reduced with permission from adjoining property owner.

4. Waters of the State including ephemeral and intermittent streams - 100 feet

D. Waste Utilization Areas

1. Human & Animal drinking Water Wells - 100 feet

2. Ditches - 50 feet

3. Property lines

- a. If residence on adjoining property within 1,000 feet of property line - 200 feet (maybe waived with consent of property owner)
- b. If no residence within 1,000 feet of property line; no setback

4. Waters of the State including ephemeral and intermittent streams and the method of application is:

- a. Spray irrigation - 100 feet
- b. Incorporation - 75 feet (can be reduced to 50 feet if incorporated within 24 hours)

c. Injection - 50 feet

Land Application Requirements

Application rates shall be based on agronomic needs of the crops to be grown and manure sampling and soil testing must be conducted to determine the application rates of the manure as fertilizer. Some other requirements for land application are:

- Manure must not be applied during inclement weather or when the land is saturated from recent precipitation, flooded, frozen, or snow-covered.
- Manure can not be placed directly in or allowed to come into contact with groundwater.
- Land application equipment must be calibrated.
- Manure can not be land applied when the vertical separation between the waste and the water table is less than 1.5 feet.

9.0 Number of CAFOs Permitted

As of February, 1999 South Carolina has approximately 1,300 active facilities permitted under the State “no discharge” permit program. Of these there are about 500 poultry facilities, 200 turkey facilities, 360 swine facilities, 150 dairy and beef facilities, and 90 miscellaneous animal facilities. South Carolina does not have any facilities that are Concentrated Animal Feeding Operations

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(CAFOs) since no discharge to surface waters occurs based on the design and operation of animal waste treatment systems. If the twenty-five year, twenty-four hour storm event discharge exception to being a CAFO based on size is removed from the Federal NPDES regulations by EPA, South Carolina has about 25 facilities that would be classified as CAFOs.

10.0 Enforcement

The SC PCA gives the South Carolina Department of Health and Environmental Control authority to issue orders and administer penalties for violations of the law or permits issued under the authority of the law. Civil penalties can be up to \$10,000 per day per violation while criminal penalties can be up to \$25,000 per day per violation and/or imprisonment up to five (5) years.

South Carolina has historically encouraged voluntary compliance with the PCA and permit requirements. However, in the last ten years, the South Carolina Department of Health and Environmental Control has taken a more aggressive approach to enforcement on agricultural facilities. Enforcement orders are now issued with penalties, as appropriate, for violations of permits.

11.0 Inspection Programs

Agricultural operations are included in the state inspection program for wastewater facilities. South Carolina conducts about 1,600 agricultural inspections per year. In addition to these inspections, the South Carolina Department of Health and Environmental Control investigates all complaints received on agricultural facilities.

12.0 Support

South Carolina has about three man years of effort in the permitting program on an annual basis. This includes two full time permit writers and one part time permit writer. The inspection program is conducted by the District of Offices of the South Carolina Department of Health and Environmental Control. There are about 8 man years of effort in the inspection, compliance, and enforcement aspects of the agricultural program.

13.0 Case Study/Innovative Programs

There are no case studies. South Carolina Regulations, R.61-43, contain a section on the use of innovative and alternative technology. The South Carolina Department of Health and Environmental Control encourages the use of innovative and alternative technology. Setbacks and other requirements in the regulations may be reduced or eliminated, as appropriate, by use of innovative and alternative technology.

14.0 References

This information was supplied by Marion Sadler, Director of the Industrial, Agricultural, and Storm Water Permitting Division of the South Carolina Department of Health and Environmental Control.

1.0 Lead Regulatory Agency

The State's Department of Environmental and Natural Resources (DNR) has given the authority to develop and enforce rules that protect, preserve and improve the quality of the water resources in South Dakota .

2.0 Lead Agency for Voluntary Programs

In South Dakota, an Agricultural Nutrient Management Team provides voluntary technical assistance for animal feeding operations. Partners supporting this team include the Natural Resources Conservation Service, South Dakota Association of Conservation Districts, the South Dakota Department of Agriculture, Department of Environment and Natural Resources, Environmental Protection Agency, and the Cooperative Extension Service.

3.0 State Regulations Regarding CAFOs

- The state's water protection laws are found in the South Dakota Water Pollution Control Act (South Dakota Codified Laws, Chapter 34A-2).
- Over the past several years, the South Dakota Legislature has passed several laws designed to strengthen the State's livestock regulatory program and protect the State's water resources.

In 1997, legislation was passed that covered four areas.

First, one new law requires additional permitting requirements for any new livestock confinement operations constructed over shallow aquifers.

A second law requires regulated livestock confinement operations to pay an annual fee to be used for defraying the cost of the regulated concentration animal feeding operations program.

A third law required DNR to develop new rules that established an inspection and enforcement program.

Finally, the fourth law strengthened the State's regulatory program by giving the secretary of the department the authority to deny applications from "bad actors".

In 1998, legislation was passed that covered two areas.

First, one law gives the State the ability to hold owners of livestock liable for environmental pollution in cases where the owners negligently entrust their livestock.

The second law established an environmental cleanup fund for spill and releases from animal feeding operations.

- The State's rules for water pollution control permits are found in the Administrative Rules of South Dakota, Article 74:52 (Surface Water Discharge Permits); and Chapter 74:52:02 (Ground Water Discharge Permits).

- In 1998, the DNR adopted rules mandating periodic inspection of concentrated animal feeding operations that are required to operate under a general or individual water pollution control permit or required to obtain approval of plans and specifications. The rules require that DNR:

Inspect the manure management system during construction and/or before animals are placed in the facility;

Inspect new operations within the first 18 months of operations;

Inspect operations with less than 2,000 animal units at least one time every three years;

Inspect operations with at least 2,000 animal units at least annually; and

Perform closure inspections.

Copies of State laws and rules can be found on the South Dakota Legislative Research Council's web page at <http://www.state.sd.us/state/legis/lrc.htm>.

4.0 Other State Agency Involvement

The State Department of Agriculture is a partner in the voluntary technical assistance provided by the Agricultural Nutrient Management Team.

5.0 State Voluntary Programs

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The Agricultural Nutrient Management Team works in cooperation with local conservation districts to prioritize requests for technical assistance. High priority requests receive nutrient management plan design assistance, including nutrient management plan preparation, and assistance in obtaining construction cost-share.

6.0 Types of Permits

Surface Water Discharge Permit (NPDES)

There are currently two general permits for concentrated animal feeding operations in South Dakota; one for swine and one for all other types of livestock. Coverage under one of these permits is required for new or expanding concentrated animal feeding operations with more than 1,000 animal units, if the county requires permit coverage, or for an existing operation if a valid water pollution complaint is received.

Storm Water Permit

If five or more acres are disturbed during the construction of a new or expanding concentrated animal feeding operation, it is required that the operation receive coverage under a general permit for storm water discharges associated with construction activity.

Ground Water Discharge Permit

This permit is required if a new or expanding concentrated animal feeding operation will be located over a shallow aquifer defined by State law (South Dakota Codified Law § 34A-3A-24).

Water Rights Permit

Stock watering is a domestic use of water as defined by State law. A water rights permit is not needed to supply livestock in a concentrated animal feeding operation if the amount of water does not exceed “reasonable domestic use”. However, a water rights permit is required if reasonable domestic use from a private water source(s) is exceeded. Reasonable domestic use is defined as the use not to exceed 25,920 gallons per day with a maximum pumping capacity of less than 25 gallons per minute.

7.0 Permit Coverage

Surface Water Discharge Permit

An application for coverage under one of the general permits consists of submitting the following in accordance with the terms and conditions of the general permit:

- Name, address, and phone number for facility contact person;
- Certification of applicant form;
- Legal location of facility

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- Plans and specifications for the manure management system, to include site specific geologic and hydrologic information. The plans and specifications must be signed and stamped by a South Dakota licensed professional engineer;
- Nutrient management plan;
- training certification (Before receiving permit coverage); and
- Notice of Completion (When construction is completed)

Once the DNR has reviewed and approved the permit application, construction of the manure management system can begin. The department must be notified when construction begins to allow for construction inspections required by State rules. When construction of the manure management system is completed, a Notice of Completion form must be submitted by the engineer to the department. The DNR will then issue a Certification of Compliance and coverage under one or both of the general permits, allowing the facility to begin operation.

Water Rights Permit

Upon receipt of a completed application for a water right permit, a report is prepared by the Water Rights Program. In order for an application to be approved, the following conditions need to be met:

- Reasonable probability that unappropriated water is available for the proposed use;
- No unlawful impairment of existing water rights;
- Must be a beneficial use of water; and
- In the public interest

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After completing a report, the chief engineer makes a recommendation as to whether the application should be approved, deferred, or denied. Following completion of the report and recommendation, the applicant is responsible for publishing a notice in an official newspaper in the county or counties in which water is to be diverted or used or where project works will be located. If an application or the recommendation of the chief engineer is contested, then a contested case hearing is scheduled for the Water Management Board to consider the application and recommendation during a board meeting. After considering all the evidence presented during a contested case hearing, the board may approve, modify, or deny the application or the board may choose to delay making a final decision pending receipt of additional information.

Ground Water Discharge Permit

Upon receipt of a completed application for a ground water discharge permit, the Secretary makes a recommendation as to whether the permit should be approved, or denied. Following completion of the recommendation, the recommendation is public noticed. If the recommendation of the Secretary is contested, then a contested case hearing is scheduled for the Water Management Board to consider the application and recommendation during a board meeting. After considering all the evidence presented during a contested case hearing, the board may approve, modify, or deny the recommendation.

8.0 Permit Conditions

Surface Water Discharge Permit (NPDES)

Compendium of State AFO Programs

The general permits contain all the requirements necessary to protect the State's ground water and surface water resources from animal feeding operations. They focus on proper design, construction, management, storage, and land application of manure. The permits require a long-term nutrient management plan along with other manure application requirements to ensure protection of the State's surface and ground water.

Approvals

The permit application must be approved prior to the start of construction (see section 7.0).

Containment Structure Design Specifications

- # Discharge of manure to surface water from a housed lot is prohibited
- # Discharge of manure from open lot allowed only during chronic or catastrophic rainfall events. Rainfall records are required to be kept.
- # Discharge from manure application sites allowed only during 25-year, 24-hour rainfall events. Rainfall records are required to be kept.
- # Seepage rate for clay liner must be less than 1/16 inch per day.
- # Concrete is allowed. Must be properly designed and reinforced.
- # Freeboard of two feet for earthen structures; one foot for concrete
- # Minimum storage capacity of 270 days.
- # Must meet the design specifications listed in the general permit or various types of containment structures.

Separation Distances

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- # Separation distance of 1,000 feet to public water source, 250 feet to private water source, and 150 feet to producer's water source.
- # A 200-foot buffer to drainage is required if manure is surface broadcast on cropping fields, alfalfa, grass or pastureland.
- # If manure is injected or applied on no-till, a 50-foot buffer is required to any drainage.
- # Spray irrigation on frozen ground is prohibited. Surface broadcast is allowed if less than 4% slopes and a 200-foot buffer to drainages is maintained.
- # Counties may have additional separation distance requirements in their zoning regulations.

Land Application Requirements

- # Nutrient management plan must be submitted for approval (see section 7.0)
- # Annual soil and manure testing required. Manure tested for Total Nitrogen and Inorganic Nitrogen. Soil tested for Nitrate-Nitrogen. Zero to two foot samples from all fields over shallow aquifers.
- # Based on sample results, crops, expected yields, legume credits, and the sampling date; the producer determines the manure application rates.
- # The producers must keep records for a minimum of three years on testing, application rates, fields, dates and times, and methods of application.

Other requirements

A minimum of two borings are required, or at least one boring per acre of containment structure.

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- # All borings must be with 200 feet of - and completed to at least 6 feet below the bottom of the containment structure.
- # At least one deep boring must provide information to determine if ground water monitoring or ground water discharge permit is necessary.

9.0 Number of CAFO Facilities Permitted

As of February 26, 1999, South Dakota's general permits cover 65 operations, and coverage of more operations are pending.

10.0 Enforcement

Violations of state permits may result in a Notice of Violation and Order or referral to the Office of Attorney General for civil or criminal lawsuits. Also, permit coverage could be revoked.

11.0 Inspection Programs

See section 3.0

12.0 Support

South Dakota had the full time equivalent (FTE) of 1 3/4 staff members running the state's animal waste control program (Agena, 1994). Shifting of department resources increased program support to the current level of 4 FTEs (U.S. EPA, 1998).

Unidentified.

14.0 References

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1.0 Lead Regulatory Agency

The Department of Environment and Conservation (TDEC) has developed appropriate procedures for implementation of the CAFO permits program.

2.0 Lead Agencies for Voluntary Programs

Education, training and technical assistance programs are available through NRCS, Tennessee Department of Agriculture (TDA), and University of Tennessee Agricultural Extension Service (NASDA, 1997). Coordination between TDEC and TDA is via a Memorandum of Understanding.

3.0 Other State Agency Involvement

Section 319 NPS program has committed to become actively involved in providing financial assistance animal feeding operations that need assistance in correcting water quality problems.

4.0 Regulations Regarding CAFOs

State law exempts agricultural practices from regulation, except for point source discharges from discrete, discernable, confined conveyances. (Linville, Region 4, pers. com., 1997).

5.0 State Voluntary Programs

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The Animal Science Department of the University of Tennessee-Knoxville Cooperative Extension service may be able to help farmers with issues related to CAFO. Operators may contact the Beef-Sheep-Horse Extension, Dairy Extension, Poultry Extension or the Swine Extension concerning development of nutrient management plans and a variety of animal related issues including waste management.

Cost share funding is offered as an incentive for good agricultural practices (NASDA, 1997).

TDA offers state cost-share programs to point source and nuisance problems (U.S. EPA, 1998).

6.0 Types of Permits

NPDES

Tennessee is authorized to administer the NPDES permit program. Tennessee has developed a general permit for Class II CAFO's. The State is currently awaiting EPA review and approval of the permit. It was anticipated that the permit may be in effect as early as March 1, 1999, if EPA approval was granted in late February.

Other

Individual NPDES permits for Class I CAFO's (1,000 AUs) became effective on July 29, 1998, while implementation of the "State Strategy for Animal Feeding Operations." The State of Tennessee will use the NRCS "Field Office Technical Guide" and NRCS "Agricultural Waste Management Field Handbook" in establishing requirements for storage capacity, liner materials, and separation distances for waste structures. Site appraisal and design standards for waste

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structures are required for all permitted CAFOs in Tennessee. Either a registered professional engineer, licensed to practice in Tennessee by the State Board of Architectural and Engineering Examiners or NRCS staff with engineering approval authority must assist in development of these materials.

7.0 Permit Coverage

Tennessee has adopted a more stringent definition for CAFOs than is currently used by EPA. Under the current Tennessee strategy, individual permits are required for operations meeting the NPDES threshold animal unit numbers (>1,000 AUs) and a general permit is to be used for those from 301 to 1,000 animal units (U.S. EPA 1998).

8.0 Permit Conditions

Approvals

There are no required approvals (NASDA, 1997).

Lagoon Design and Specifications

There are no state standards (NASDA, 1997).

Discharge Rules

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There are no specific state standards other than that of no discharge allowed except in the event of a 25-year, 24-hour storm event (NASDA, 1997).

Waste Management Plans

There are currently no state standards regarding waste management plans (NASDA, 1997). The Tennessee strategy will require operation in accordance with management plans that meet or exceed NRCS standards and guidelines approved by TDA (U.S. EPA, 1998).

Separation Distances

There are no state standards (NASDA, 1997).

Land Application Requirements

There are no state standards (NASDA, 1997).

9.0 Number of CAFO Facilities Permitted

Class I facility permit requirements became effective on July 29, 1998. Class II CAFO permits are expected to become effective immediately following EPA review and approval of the general permit.

10.0 Enforcement

11.0 Inspection Programs

On-site inspections of Class I and II facilities are authorized for any property, premise, or place on or related to the collection, treatment, storage and land application of wastes, except for production facilities where bio-security is a concern. Staff may inspect and obtain copies of any records that must be kept under the terms and conditions of the permit, and may obtain samples of any wastewater, groundwater or surface water. The Tennessee strategy requires annual inspections of large facilities (Class I CAFO) with individual permits and inspection of Class II facilities based on complaints and availability of staff to perform a less frequent inspection schedule.

12.0 Support

TDEC will assigned responsibility for Class I and Class II CAFO operations to existing staff in each of the 8 Environmental Assistance Centers (EACs) across the State. TDA will assign responsibilities for CAFO implementation to approximately 7 or 8 existing positions which will include duties other than just CAFOs.

13.0 Case Study/Innovative Programs

Unidentified.

14.0 References

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National Association of State Departments of Agriculture (NASDA). 1997. Summary Matrix of State Survey on Waste and Manure Management Regulations.

U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions
Compiled by G. Beatty, U.S. EPA, Office of Water, Washington, D.C.

1.0 Lead Regulatory Agency

The Texas Natural Resource Conservation Commission (TNRCC) regulates wastes from CAFOs producing livestock or poultry.

2.0 Lead Agency for Voluntary Programs

The Agriculture Team of TNRCC works with the Texas Agricultural Extension Service to run training and educational programs to fulfill the requirements of the Subchapter K Training and Audit Program (TNRCC, August 4, 1997). Texas State Soil and Water Conservation Commission provides assistance to operators of smaller animal feeding operations.

3.0 Other State Agency Involvement

A memorandum of understanding (MOU) was written to coordinate jurisdictional responsibility, program responsibility and procedural mechanisms for point and nonpoint pollution programs of the Texas State Soil Conservation Commission and the TNRCC (Title 30, Part I, Chpt. 7, §7.101). The MOU was issued on May 16, 1996 and would become effective upon execution by both agencies.

4.0 State Regulations Regarding CAFOs

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The Texas Water Code (TWC) and the Texas Clean Air Act (TCAA) authorizes TNRCC to administer the CAFO program. In Texas, water quality requirements are imposed on CAFOs built before July 13, 1995 by 30 TAC 321 Subchapter B entitled *Commercial Livestock and Poultry Production Operations*. Air quality applications are given by Chapter 116 Regulation VI entitled *Control of Air Pollution by Permits for New Construction or Modification*. 30 TAC 321 Subchapter K, *Concentrated Animal Feeding Operations*, includes applications for both air and water quality. These rules require all CAFO operators to collect, store, and handle animal wastes and control dust and odor.

4.0 State Voluntary Programs

TNRCC's Agriculture Team helps CAFO operators select, implement, and use the best technologies for handling animal wastes. The Team also participates in the 319(h) Non-point Source Grant Program. Small non-permitted AFOs are generally the responsibility of the Texas State Soil and Water Conservation Commission (since 1993). The Commission assists operators of small CAFOs with technical issues and require them to come into compliance with the CAFO rules as expeditiously as possible without requiring a permit (Texas Center for Policy Studies, 1995).

TNRCC runs the Dairy Outreach Program which targets eight counties that have been identified as having water quality problems related to non-point pollution from CAFOs. All dairies must register with the state and can enroll in the outreach program if their county participates in the program. Erath, Bosque, Hamilton, Comanche, Johnson, Hopkins, Wood and Rains are the participating counties. If a new facility in one of these counties would exceed the head count specified in Group B of the regulations, then the operator must file an application for written

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authorization for the dairy, the operator must complete an 8-hour course on animal waste management within 12 months of beginning the operation, complete an additional 8 hours of training every 24 months after the initial training.

Austin and San Antonio have Local Pollution Abatement Programs that limit impervious cover and expand zoning authority (Texas Center for Policy Studies, 1995). At the Federal level, operators may get technical assistance from USDA (NASDA, 1997).

Incentives for farmers are limited to EQIP cost-share funding and a small amount of state cost-share funding for non-permitted AFOs (NASDA, 1997). Texas also has state-funded and local non-point source pollution control programs.

6.0 Types of Permits

NPDES

Texas is not approved to administer the NPDES program. In Texas, CAFO general NPDES permits and individual permits are issued by EPA Region 6. The general permit went into effect on March 10, 1993 and will expire on March 10, 1998. Texas was allowed to add its own language to the general permit (Senkayi, Region 6, pers. com., 1997).

Other

Texas issues state permits-by-rule under which CAFOs may seek coverage. Subchapter B permits impose water quality requirements on facilities that stable, confine, feed or maintain 1,000 AUs for

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any 90-day period that do not produce crops in the area of confinement. So that air quality also is protected, Texas requires Subchapter B permit holders to apply for Chapter 116 air quality permits, unless the operation meets the exemptions for the air quality permit under 30 TAC Section 116.211.

Subchapter B requires that CAFOs apply for the permit if they confine animals for any 45 days or more out of 12 months. For authorization under Subchapter B the following items must be presented with the application:

- the maximum number of animals in confinement,
- final site plans,
- maps identifying the CAFOs general location, land boundaries, nearby groundwater wells and surface water, prevailing winds and distance and direction to occupied structures within 1 mile of a permanent odor source.
- pollution prevention plans, or PPPs
- ground and surface water recharge feature certification and a plan demonstrating protection of water quality.

Written authorization may be renewed every five years under certain conditions.

7.0 Permit Coverage

NPDES permits are required for operations that meet the Federal definition of a CAFO.

Generally, this covers facilities with 1,000 AUs. Under Subchapter B, the TNRCC Executive Director can designate as CAFOs any AFO (300-1,000 AUs) that directly or indirectly discharges a significant amount of pollutants through a man-made device into state waters. Only facilities that discharge in other than 25-year 24-hour storm events are considered. Poultry facilities are not considered CAFOs unless the operators use a liquid manure handling system, stockpile manure near a waterway, or apply to the land in such a way that runoff can threaten water quality.

Subchapter B, and Chapter 116 permits all have slightly different animal (head) thresholds, but in general state permits are required for existing, new, and expanding CAFOs that confine 1,000 or more AUs and any AFO that is a significant polluter. There is additional state coverage in certain circumstances.

Permits are required for facilities with more than 300 animal units if located in Dairy Outreach Program Area (USEPA, 1998).

8.0 Permit Conditions

Approval

Site approval is required on a case-by-case basis.

Lagoon Design and Specifications

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The waste storage area is to be built following a specific design standard. Storage structures should be able to hold wastes during a 25-year 24-hour storm event, and 21 days of process wastewater storage. Storage structures must have a 1- to 2-foot freeboard. Length of storage for waste lagoons is 21 days for liquid waste. Liner has to be placed and compacted clay at 1.5 feet with a hydraulic conductivity of 10^{-7} cm/sec (see also NRCS Tech Note 716). Operations with more than 1,000 AUs that have anaerobic treatment lagoons must adhere to buffer distances. (That's how air quality is regulated/controlled [NASDA, 1997].)

Discharge Rules

Facilities cannot discharge other than during the 25-year 24-hour storm event. Waste structures should be designed to contain wastes during the 25-year 24-hour storm event, but discharges that occur when catastrophic rainfall events exceed the capacity of the structure is allowed (NASDA, 1997).

Waste Management Plans

In order to operate, every facility must prepare a pollution prevention plan (PPP). The plan has to describe implementation of practices that will limit the discharge of pollutants into state waters and assure compliance. A PPP may refer to the facilities Natural Resources Conservation Service (NRCS) waste management plan (WMP) if it contains equivalent PPP requirements. Specifically, the PPP must include final site plans; identification of potential pollutant sources and measures used to control these potential sources; identification of recharge zones/features on the facility and measures to prevent impacts to the recharge zones; and all sampling data of manure, wastewater, soils, groundwater and surface discharges.

Separation Distances

Separation distance from dwellings is ½ mile for new CAFOs with more than 1,000 AUs and 1/4 mile from property lines if land application is during the nighttime hours. Distance from private water wells is 150 feet and distance from municipal wells near the land application sites is 500 feet. Distance from groundwater is determined by prevention of hydrological connection as per site design. Groundwater requirements include certification of absence or presence of recharge features with a plan to prevent impacts (NASDA, 1997).

Land Application Requirements

Texas recognizes Federal limits placed on land application of nitrogen unless water is threatened by phosphorus. State rules for land application are followed when soil has more than 200 ppm phosphorus. Approval is needed to spread wastes after that point (NASDA, 1997).

Other Requirements

CAFOs may be required to have or practice pollution prevention plans, BMPs, monitoring, reporting, inspections, and record keeping (NASDA, 1997).

9.0 Number of CAFO Facilities Permitted

In Texas, 195 individual NPDES permits were issued to CAFO operators. All of these permits are technically expired, but retain an active status. The number of facilities covered under the general

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NPDES permits was not identified (Permit data from EPA Permit Compliance System - 8/97).

There are 547 facilities permitted by TNRCC (USEPA, 1998).

10.0 Enforcement

Civil penalties not to exceed \$25,000/day of the violation may be imposed. Violators may also be sentenced to imprisonment for up to 1 year (NASDA, 1997).

11.0 Inspection Programs

Complaint investigations result in about 20% of all facilities being inspected annually (USEPA, 1998). Routine on-site inspections are required (NASDA, 1997).

The general permit requires that the permittee perform a complete inspection of the facility with a report at least once a year. The parties responsible for inspection of CAFOs must be named in the PPP. Inspection documents should be kept on-site for at least 3 years. Also, farms that are within the Dairy Outreach Program Areas (which consists of 8 counties in the Upper North Bosque Watershed) undergo annual inspections (USEPA, 1998).

12.0 Support

Approximately 8 FTE, primarily field staff, are dedicated to AFO/CAFO projects.

The TNRCC established a Dairy Outreach Program Area (DOPA) in the Upper North Bosque River watershed. This watershed has been impacted by CAFO-related activities. All facilities within the DOPA are inspected annually. Also, a state permit is required for any facility with more than 300 animal units located in the DOPA, as compared to 1,000 animal units outside of DOPA (USEPA, 1998).

14.0 References

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<http://www.tnrcc.state.tx.us/water/quality/agri/agair.html> [1997, November 5].

Texas Natural Resources Conservation Commission (TNRCC) Agriculture and Watershed

Management Division. (1996, March). Concentrated Animal Feeding Operations in Texas:
Subchapter K Animal Waste Management Rules [Online]. TNRCC. Available:
<http://www.tnrcc.state.tx.us/admin/topdoc/rg/218.pdf> [1997, November 5].

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U. S. Environmental Protection Agency. 1993. The Report of the EPA/State Feedlot Workgroup.
Office of Wastewater Enforcement and Compliance, Washington, D. C.

1.0 Lead Regulatory Agencies

The CAFO program in Utah is administered by two agencies, the Utah Department of Environmental Quality (DEQ) and the Utah Department of Agriculture and Food.

2.0 Lead Agency for Voluntary Programs

Utah Department of Environmental Quality's Division of Water Quality and the Utah Department of Agriculture and Food.

3.0 State Regulations Regarding AFO

The State of Utah defines CAFOs according to Utah Admin. R. R317-8-3.5(5)(a). The State is given authority to issue discharge permits to CAFOs by the Utah Code Ann. §19-5-101 et seq. (Utah Water Quality Act is similar to the Federal CWA.)

4.0 Other State Agency Involvement

Soil Conservation Districts

5.0 State Voluntary Programs

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Utah CAFO operators may go to the Utah State University Extension Service, Utah Department of Agriculture and Food and Department of Environmental Quality for information about waste management and the environment. In addition, the extension service offers publications through their World Wide Web site that includes several fact sheets on managing small farms (poultry, sheep, pig, etc.). Utah farmers are eligible to receive help from the regional W.I.R.E (Western Integrated Ranch/Farm Education) program.

6.0 Types of Permits

NPDES

Utah is authorized to administer the Federal NPDES program (NASDA, 1997). In the past, some facilities were covered under general or individual permits. Utah does not require large corporate hog farms to seek coverage under NPDES permits if these facilities do not have a point source discharge to surface waters of the State. Utah's general CAFO permit went into effect on 7/27/88 and apparently expired on 4/30/93, though the conditions of the permit still apply. The five-year UPDES permit must be obtained from the Utah Water Quality Board (NASDA, 1997).

Other

The state issues ground water permits to many CAFOs and AFOs which have animal waste lagoons including large corporate hog operations and many dairy operations (U.S. EPA, 1998).

7.0 Permit Coverage

The UPDES permit applies to any person or company that discharges pollutants from a point source to surface waters of the state and any CAFO, defined as 1,000 AUs or more. The state's list of regulated pollutants includes "agricultural wastes discharged into water."

8.0 Permit Conditions

Approvals

Utah Department of Environmental Quality, Division of Water Quality

Lagoon Design and Specifications

Ground water permits detail seepage limits and construction quality control requirements for lagoon liners (U.S. EPA, 1998).

Discharge Rules

Utah Water Quality Act, UCA 19-1-101 through 19-5-130 and Utah Administrative Code UAC R317-1 through R317-8

Waste Management Plans

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Ground water permits require nutrient management plans if land application is involved (U.S. EPA, 1998).

Separation Distances

Utah does not have setback or odor requirements (U.S. EPA, 1998).

Land Application Requirements

Unidentified.

9.0 Number of CAFO Facilities Permitted

There are no CAFOs currently covered by NPDES permits. Approximately 70 AFOs are covered by ground water permits (U.S. EPA, 1998).

10.0 Enforcement

UPDES permits can be revoked, modified, or suspended for violation of the permit conditions, obtaining the permit through misrepresentation, or changes in conditions that require reduction or elimination of the permitted discharge (NASDA, 1997).

11.0 Inspection Programs

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All ground water permitted facilities are inspected at least annually and if ground water monitoring is involved, this also includes sampling (U.S. EPA, 1998).

12.0 Support

Approximately 1.5 FTEs are spent on CAFO regulation (U.S. EPA, 1998). Funding is targeted to high priority impaired watersheds. If a major source of impairment is from CAFOs then many projects will be directed at that source. This includes 319 and EQIP money as well as a few other sources (U.S. EPA, 1998).

13.0 Case Study/Innovative Programs

Unidentified.

14.0 References

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U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions Compiled by G. Beatty, U. S. EPA, Office of Water, Washington, D.C.

1.0 Lead Regulatory Agency

The Virginia Department of Environmental Quality (VDEQ) is responsible for programs that ensure the protection of Virginia's environment and is the lead agency with authority to regulate discharges of wastes from animal feeding operations (VDEQ, 1996).

2.0 Lead Agency for Voluntary Programs

Education, training and technical assistance are available through Virginia Extension Service, Conservation Districts, NRCS, and Virginia Department of Agriculture (NASDA, 1997).

3.0 Other State Agency Involvement

VDEQ works with soil and water conservation districts on best management practices (BMP) development. VDEQ works with NRCS on lagoon design and construction.

4.0 State Regulations Regarding AFO

Virginia is delegated to issue NPDES permits under the Federal Clean Water Act. Authority to regulate CAFOs is also given by VA Code §62.1-44.15 through 44.30 and Code 9 VAC 25-30-10 et seq. The new Agricultural Stewardship Act applies to CAFOs with no state permits. There are no air quality regulations affecting CAFOs. Wetlands are protected through state and federal wetlands regulations plus soil certification for lagoons (NASDA, 1997).

5.0 State Voluntary Programs

Virginia's Extension Service is starting a new stewardship program for dairies. A National Pork Producers Council program is offered for Virginia farmers at least once a year. Farmers also get information through visits from soil and water conservation representatives. Environmental Quality Incentives Program (EQIP) funding, State/Federal cost-share programs and tax credits are offered as incentives to farmers (NASDA, 1997).

6.0 Types of Permits

NPDES

Virginia is approved to administer the Federal NPDES program. Virginia categorizes point sources as major, minor, or general depending on the type and volume of discharge. NPDES permits (called VPDES permits in Virginia) have not yet been issued to CAFOs.

Other

Virginia issues a statewide permit, the Virginia Pollutant Abatement (VPA) permit, to address non-point source pollution including that from CAFOs and manure application. VPA permits prohibit discharges to surface waters, carry specific waste storage and disposal requirements, require a nutrient management plan for manure disposal, require BMPs, require groundwater monitoring, and require sludge monitoring. The VPA permits have a term of 10 years (VDEQ, 1996). The general VPA permit became effective on November 16, 1994.

7.0 Permit Coverage

Virginia issues general and individual no-discharge permits to CAFOs that have 300 AUs or more and a liquid waste system. For purposes of CAFO permitting regulations, two or more confined feeding operations under common ownership are considered to be one CAFO if the two operations are adjoined or using a common waste disposal system. The general permit for confined animal feeding operations developed with EPA is enforced in the same way as individual permits.

The state has a bad actor law implemented by Virginia Department of Agriculture for those facilities that do not have a VDEQ permit (NASDA, 1997).

8.0 Permit Conditions

Approvals

Soils beneath a lagoon must be approved by an engineer. A certified planner must develop a management plan before development.

Lagoon Design and Specifications

The required lagoon capacity must handle 60-120 days of storage. The storage structure must be able to contain wastes except in the case of a storm event greater than the 25-year 24-hour storm. Storage structures are required to have a 1-foot freeboard. Liner material can be synthetic or clay. Compacted soil liners must be at least one foot thick. No more than 10^{-7} cm/sec is allowed to seep

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from the lagoon. Earthen waste storage structures that are built below the seasonal high water table must keep the waste surface level at least two feet above the water table.

Discharge Rules

No discharge except in the event of a 25 year, 24 hour storm.

Waste Management Plans

Before registering a CAFO, the owner must submit a nutrient management plan and receive approval of the plan from the Department of Conservation and Recreation. The nutrient management plans are enforceable through the VPA permit.

Separation Distances

Local zoning ordinances are sometimes used to determine separation distance to dwellings and property lines. The required minimum buffer zones specified on the VPA permit are as follows:

- 200 feet between wastes and occupied dwellings;
- 100 feet between wastes and water supply wells or springs;
- 50 feet between surface applied waste and surface water courses;
- 25 feet between subsurface injected wastes and surface water courses;
- 25 feet between wastes and rock outcroppings (except limestone) and;
- 50 feet between wastes and limestone outcroppings.

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No separation is required between the bottom of the waste structure and groundwater, but if they come within 18 inches groundwater monitoring wells must be installed (NASDA, 1997).

Land Application Requirements

Wastes must be land applied at agronomic rates. There are limits on land application in sensitive environmental areas (NASDA, 1997).

Other Requirements

Records must be kept at the facility for 3 years to meet individual permit requirements and 2 years for general permits. Some permits require a record of freeboard height. No new waste storage facilities may be built on a 100-year floodplain unless it is able to contain wastes in the event of a 100-year storm.

9.0 Number of CAFO Facilities Permitted

General permits have not been issued to any CAFOs.

10.0 Enforcement

Unidentified.

11.0 Inspection Programs

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Violators are identified through inspections and complaints. Routine on-site inspections are required at least once every five years (NASDA, 1997).

12.0 Support

The State of Virginia may have more than 1 FTE committed to CAFOs/AFOs (U.S. EPA, 1998.).

13.0 Case Study/Innovative Programs

Unidentified.

14.0 References

Letzkus, Mary. U. S. Environmental Protection Agency, Region 3. Summary of state program information sent to Ruth Much (SAIC), Fall 1997.

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Available: <http://www.deq.state.va.us/prmtregs/watperm.html> [1997, November 12]

1.0 Lead Regulatory Agency

The Vermont Department of Environmental Conservation (DEC) is delegated to administer the Federal NPDES program (Voorhees, Region 1, pers. com., 1997).

2.0 Lead Agency for Voluntary Programs

Unidentified.

3.0 Other State Agency Involvement

Vermont Department of Agriculture is working with Vermont DEC to develop a CAFO program based on Federal CAFO requirements and new state legislation (Voorhees, Region 1, pers. com., 1997). The State intends to work with U.S. EPA to develop a CAFO program (U.S. EPA, 1998).

4.0 State Regulations Regarding CAFOs

There are no specific rules written for CAFOs, however, they may be impacted by performance-based Accepted Agricultural Practice Rules (AAPs) under Vermont's agricultural nonpoint source program. Vermont has passed legislation addressing farms that operate at 95% of CAFO jurisdiction to improve state regulation of farms (U.S. EPA, 1998). These rules don't meet all of EPA's CAFO requirements (Voorhees, Region 1, pers. com., 1997). There are no air quality regulations related to CAFOs (NASDA, 1997).

5.0 State Voluntary Programs

No state educational, training or technical assistance programs for CAFO operators have been identified for Vermont. The state does not offer incentives (NASDA, 1997).

6.0 Types of Permits

NPDES

Vermont is authorized to administer the NPDES program. No NPDES permits have been issued to Vermont CAFOs to date (Voorhees, Region 1, pers. com., 1997).

Other

Vermont has a state permit that addresses CAFOs. A permit is required for the construction of barns or expansion based on the number of animals at the facility (NASDA, 1997).

7.0 Permit Coverage

Vermont has not issued any NPDES permits to CAFOs yet (U.S. EPA, 1998).

8.0 Permit Conditions

Approvals

No appraisal is required before construction of waste structures (NASDA, 1997).

Lagoon Design and Specifications

Waste lagoons must be constructed according to NRCS standards and specifications. Storage capacity must contain wastes following a 25-year 24-hour storm event.

Discharge Rules

No discharge and wastes from a 25-year, 24-hour storm event must be contained.

Waste Management Plans

Unidentified.

Separation Distances

There are no separation distance requirements that specify distance to dwellings. Distance to property lines is controlled through local zoning. Structures must be at least 100 feet from a neighbor's shallow well.

Wastes have to be applied at agronomic rates (NASDA, 1997).

9.0 Number of CAFO Facilities Permitted

No CAFOs have been issued NPDES permits or other water quality permits at this time (Voorhees, Region 1, pers. com., 1997).

10.0 Enforcement

Unidentified.

11.0 Inspection Programs

Violators are identified by complaint and inspections. Routine on-site visits are required (NASDA, 1997).

12.0 Support

Unidentified.

13.0 Case Study/Innovative Programs

Unidentified.

14.0 References

National Association of State Departments of Agriculture (NASDA). 1997. Summary Matrix of State Survey on Waste and Manure Management Regulations.

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1.0 Lead Regulatory Agency

The Washington Department of Ecology (WDOE) is responsible for regulation of CAFOs under the State Water Pollution Control Act.

2.0 Lead Agency for Voluntary Programs

Unidentified.

3.0 Other State Agency Involvement

The Conservation Districts and Washington Conservation Commission work with WDOE to protect water quality (*Focus*, 1993).

4.0 State Regulations Regarding CAFO

Statutory authority for the regulation of Washington AFOs and CAFOs is given by Chapter 90.48 of the RCW and the Washington Administrative Code (WAC) Chapter 173-220 and Chapter 173-216. On April 1, 1998, Governor Gary Locke signed Senate Bill 6161 (Dairy Nutrient Management Act of 1998), requiring all of Washington's dairies to comply with the Federal Clean Water Act. The following requirements are part of the new law:

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- every Washington dairy must develop and implement a certified nutrient management plan
(developed per NRCS specifications),
- all dairies are subject to periodic, unannounced inspection conducted by WDOE,
- DOE will continue to respond to complaints about certain water quality violations,
- a comprehensive database will be created to track CWA compliance and improvements in
nutrient management on individual farms,
- farms can be penalized up to \$10,000 per day for water quality violations,
- farms can be penalized for failing to register with WDOE and failure to meet deadlines for
approval and certification of a plan, and
- a zero tolerance policy on waste water discharges during a period prior to plan certification and
implementation will be enforced.

5.0 State Voluntary Programs

Substitute Senate Bill 5849 established a dairy waste management program that combined the issuance of state discharge permits with technical assistance from local conservation districts.

Washington farmers have access to the regional Western Integrated Ranch/Farm Education (W.I.R.E) program.

6.0 Types of Permits

NPDES

Federal and statewide CAFO program requirements are administered jointly. The Dairy Farm NPDES and State Waste Discharge General Permit became effective on September 3, 1994 and will expire on September 2, 1999. The permit covers farms that meet the definition of a concentrated dairy feeding operation in RCW 90.64.010(3), meets the definition of a concentrated animal feeding operation (under CFR Part 122.23, Appendix B), or that are significant contributors of pollution (RCW 90.64.020 or RCW 90.64.030). The permit does not cover the activities or discharges of an individual NPDES permit or state permit (until those permits have expired).

The general NPDES permit for dairy farms states that there shall be no discharges of process wastes into the surface waters of the state except in the case of the 25-year 24-hour storm event. The permit doesn't allow any discharge that would violate the State Surface Water Quality Standards.

Individual NPDES permits may be required if an operation does not meet the requirements of the general permit, if revised effluent limitation guidelines are promulgated for point sources covered by the general permit, or other causes as listed in WAC 173-220-150(1)(d).

Though CAFO regulation currently targets dairies with over 300 AUs and smaller dairies that are found to contribute a significant amount of pollution to state waters, a general permit is proposed

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for Washington to cover others kinds of AFOs. A Substitute Senate Bill (SSB 5849) enacted on May 6, 1993 authorized wastewater permits for animal feeding operations with 200 confined mature dairy cattle that create pollution in surface or ground waters of the state. Under this bill, all CAFOs would have to obtain NPDES/State waste discharge permit coverage (USEPA/State Feedlot Workgroup, 1993).

Other

Relatively minor polluters that do not meet the definition of a CAFO are covered under the Agricultural Compliance Memorandum of Agreement (MOA) program. The State Water Pollution Control Act requires facilities that discharge to groundwater to seek coverage under the statewide discharge permit (USEPA/State Feedlot Workgroup, 1993).

8.0 Permit Coverage

Permits are required for commercial dairies with >300 AUs or any dairy which causes a water quality violation. This threshold translates into all operations with >700 mature dairy cattle (milk or dry), or >200 dairy cattle if the operation discharges into state waters through a man-made conveyance, allows water to come into contact with animals, or allows discharge waters to become polluted by passing through the confinement area. Under Substitute Senate Bill 5849, the NPDES general permit would apply only to commercial dairies that meet the federal definition of a CAFO or directly discharge to groundwater (USEPA/State Feedlot Workgroup, 1993).

Approvals

Unidentified.

Lagoon Design and Specifications

Waste storage facilities identified in the waste management plan shall be sited, designed, constructed, operated and maintained to meet all applicable practices, standards and specifications found in the US Soil Conservation Field Office Technical Guide. Facilities must not confine more animals than the waste storage capacity is designed to handle (WA Dairy General Permit, 1994).

Discharge Rules

If a waste discharge occurs (except during the 25-year 24-hour storm event) the permittee has to record:

- the description, date, time, and duration, of the discharge,
- an estimated volume,
- name and location of the receiving stream, and
- appropriate corrective steps.

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Then, the permittee has to notify the Department of Ecology within 24 hours if the discharge was to surface water. Written reports have to be submitted to the Department within 5 days (WA Dairy General Permit, 1994).

Waste Management Plans

Washington dairies must develop waste management plans. As per the federal/state permit requirements, Animal Waste Management Plans must contain 1) a description of the dairy, it's location, layout, herd size, and process wastes inventory; 2) a description of all system components, location, layout, size and practices; 3) system operation and maintenance requirements; and 4) a description of all waste application (nutrients, crops, fields and soil types applied to, and amount and timing). After completion of the plan the dairy must be in compliance with it at all times. Certain dairies may be responsible for developing Conservation Plans with the conservation districts to prevent and solve site-specific water quality problems (WA Dairy General Permit, 1994).

Separation Distances

Unidentified.

Land Application Requirements

Wastes can be applied to the land as specified in individual dairy animal waste management plans, (WA Dairy General Permit, 1994).

Facilities have to keep records for 3 years. BMPs are contained in the Conservation Plans (WA Dairy General Permit, 1994).

9.0 Number of CAFO Facilities Permitted

Approximately 8 facilities were covered by NPDES permits in September 1993. These permits were issued in the late 1970s and early 1980 and have been administratively continued (USEPA/State Feedlot Workgroup, 1993). Approximately 30 out of 800 dairies are covered by the Washington CAFO general permit. No CAFOs are covered by state permits/licenses other than NPDES.

10.0 Enforcement

The Washington Department of Ecology and the State Attorney General have the authority to levy fines under Washington's Water Pollution Control Law (Chapter 90.48 RCW).

Permitted facilities that violate state water quality laws may have their permits revoked, modified and reissued or terminated. Violators may also receive administrative orders to correct problems. Civil penalties of \$250-\$10,000 per day may be levied and other resource damages may be assessed (USEPA/State Feedlot Workgroup, 1993).

WDOE site investigations are triggered by complaints. Informal enforcement actions are preferred. Confirmed violations of the Water Pollution Control Act are referred to the local

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conservation district so that operators may voluntarily develop a comprehensive conservation plan (6 months to develop 18 months to implement). Formal enforcement actions are taken when voluntary compliance cannot be achieved, or if the violation is significant. Formal enforcement may include a notice of violation (NOV), administrative order, civil penalty, resource damage assessment, and referral for court action. Innovative approaches such as mediation, environmental audits, mandatory education, consent orders or decrees, and compensatory actions may be applied (USEPA/State Feedlot Workgroup, 1993).

11.0 Inspection Programs

Unpermitted CAFOs are identified by complaints which are investigated by the Department of Ecology (*Focus*, 1993). Inspection requirements for a facility are determined at the initial site inspection. Under the general NPDES permit, facilities must allow an authorized representative of the WDOE to enter the property where a discharge was located; access records; inspect monitoring equipment or method of monitoring required in the permit; inspect collection, treatment, pollution management, or application facilities; and sample any discharge of pollutants (WA Dairy General Permit, 1994).

As a result of their watershed approach, the CAFO/AFO program was coordinated with the TMDL program in the Chehalis watershed. WDOE conducted inspections of all dairies in this watershed in support of the TMDL process (U.S. EPA, 1998).

12.0 Support

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Washington's dairy waste control program is staffed by 6 FTEs (5 in regional offices and 1 in the central office). They are responsible for investigating complaints, inspecting sites, and performing enforcement activities. The number is expected to increase to 7-8 FTE as a result of recently passed legislation (U.S. EPA, 1998).

In 1993, the Washington Conservation Commission received \$3 million to carry out the dairy waste management program (USEPA/State Feedlot Workgroup).

13.0 Case Study/Innovative Programs

Unidentified.

14.0 References

Dairy Nutrient Management Bill Becomes Law in Washington State. (1998, April). [Online.]

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U. S. Environmental Protection Agency. 1993. The Report of the EPA/State Feedlot Workgroup.
Office of Wastewater Enforcement and Compliance, Washington, D. C.

Washington Dairy Farm NPDES and State Waste Discharge General Permit. (1994, August 10).
Washington Department of Ecology.

1.0 Lead Regulatory Agency

Unidentified.

2.0 Lead Agency for Voluntary Programs

West Virginia Department of Agriculture addresses groundwater protection by maintaining voluntary educational programs and providing financial incentives to persons who apply fertilizers and manure.

3.0 Other State Agency Involvement

The Department of Environmental Protection, Division of Natural Resources may work with the Department of Agriculture on groundwater sampling and inspection programs and the management of groundwater data.

4.0 State Regulations Regarding AFO

Under the authority of West Virginia Code §22-12-5c, the commissioner of the State Department of Agriculture may promulgate rules to protect groundwater of the state from contamination by fertilizers and manure. The general groundwater protection rules are found under Title 61 Series 6C (Groundwater Protection).

5.0 State Voluntary Programs

Educational programs on the use of fertilizers and manures are intended to help farmers voluntarily prevent contamination of groundwater. Farmers are encouraged to implement current BMPs that are recommended by the state. Voluntary programs also include training for persons that would be making recommendations to farmers about the application of manure and fertilizers. The commissioner must review voluntary as well as mandatory programs for effectiveness every five years and incorporate current best management practices.

6.0 Types of Permits

CAFOs in West Virginia are subject to the Federal NPDES permit program. The regulations for CAFOs are found under West Virginia Code Title 47 Series 10-13 on Special NPDES programs.

7.0 Permit Coverage

West Virginia follows the Federal definition of CAFOs.

8.0 Permit Conditions

Approvals

Unidentified.

Unidentified.

Discharge Rules

Unidentified.

Waste Management Plans

Under the state's groundwater protection rules, any person maintaining more than 1000 animal units in a feedlot must submit a Nutrient Management Plan to the commissioner and implement the plan within three years of the development of the plan. Any person maintaining more than 300 animal units in a feedlot in an area where potential for impairment of existing groundwater quality is high, must submit a Nutrient Management Plan to the commissioner and implement it within five years of development of the plan. The Nutrient Management Plan is specified in the Nutrient Management Standard Practice #590 of the Soil Conservation Service Field Technical Guide.

Separation Distances

Unidentified.

Land Application Requirements

Unidentified.

9.0 Number of CAFO Facilities Permitted

No NPDES permits have been issued.

10.0 Enforcement

The commissioner of the Department of Agriculture may conduct hearings, assess civil penalties, seek injunction relief and issue orders that will minimize contamination of groundwater.

11.0 Inspection Programs

Unidentified.

12.0 Support

Unidentified.

13.0 Case Study/Innovative Programs

Unidentified.

14.0 References

Unidentified.

Background

In 1994, Wisconsin had approximately 70,000 animal facilities (USEPA, 1998). About 28,000 of those were dairy farms, and the remainder were beef, poultry, swine and sheep operations. Each year since 1983, approximately 1,000 dairy farms have gone out of business, but the remaining facilities have grown large enough to keep productivity at the same level (Section H. Wisconsin, source unknown). The average size of dairy farms is 70-100 milk cows (Wisconsin, Source, unknown). Overall, there are 65 AFOs with 1,000 animal units or more and 2,500 AFOs with less than 1,000 but more than 300 animal units (USEPA, 1998).

1.0 Lead Regulatory Agency

Wisconsin CAFOs have been regulated by the Wisconsin Department of Natural Resources (DNR) under the Wisconsin Pollutant Discharge Elimination System (WPDES) since 1984 (USEPA/State Feedlot Workgroup, 1993).

2.0 Lead Agency for Voluntary Programs

The Wisconsin DNR and the Wisconsin Department of Agriculture Trade and Consumer Protection (DATCP) administer the Non-point Source Pollution Abatement (NPS) program in Wisconsin (Section H. Wisconsin, source unknown). Farmer assistance is available from other county, state and federal conservation agencies.

3.0 Other State Agency Involvement

Unidentified.

4.0 Regulations Regarding CAFOs

Wisconsin Administrative Code (WAC) NR 243 was developed in 1984 and is the foundation for the Wisconsin's Animal Waste Management program. The Animal Waste Management Program protects water quality, but there are no specific state air regulations or state wetland regulations that relate to CAFOs. Chapter NR 243 does not give the authority to pursue odor or nuisance complaints unless a water quality violation has also occurred. (Wisconsin has odor control rules, but these rules are not well enforced and have not been effective in eliminating odor problems. Avoidance of nuisances is left up to local zoning [Agena, 1994].) Chapter ATCP 50 provides rules for constructing animal waste storage and runoff control structures, appropriately abandoning CAFOs, and information on cost-share programs.

Additional state wastewater laws that may apply to CAFOs can be found in WAC Chapter 100-299. The WPDES program was established by Chapter 283.13(1) of the Wisconsin Statutes. The authority to regulate CAFOs is given by Chapter 147 of the Wisconsin Pollution Discharge Elimination Law.

5.0 State Voluntary Programs

The University of Wisconsin Cooperative Extension Service (CES) offers the Nutrient and Pest Management (NPM) program which demonstrates cost-saving techniques for fertilizing, promotes

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management practices that protect water, and addresses specific environmental impacts of livestock. Through the University of Wisconsin Extension (UWEX) program, CES also promotes understanding of environmental regulation and compliance with the law among business people, farmers, and the public. CES educates farmers on grazing management by working with facilities and equipment in grazing systems to promote efficient use of resources and energy. Two voluntary programs run in conjunction with NPM are 1) DNR's Priority Watershed Program and 2) the Soil Nutrient Management Program. The Soil Nutrient Management Program deals specifically with issues related to cropland, but could potentially provide animal waste managers with tips for manure application.

The NPS cost-share program does not differentiate between new and existing facilities and does not consider AUs. However, landowners that are regulated under the Animal Waste Management Plan (NR 243, Wis. Adm. Code) cannot participate in the NPS program. Operators that receive cost-share assistance under NPS are required to have a Nutrient Management Plan that includes Technical Standard 590 from the Natural Resource Conservation Service (NRCS) Field Office Technical Guide (FOTG). Significant polluters may be issued a Non-point Source Order to abate loading.

6.0 Types of Permits

NPDES

Wisconsin was authorized to run the national program for water pollution control in February 1974. The statewide Wisconsin Pollution Discharge Elimination System (WPDES) permit is patterned after the Federal NPDES permit and covers significant municipal, industrial and animal

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waste facilities that discharge to the waters of the state. The WPDES permits can be general (statewide) or specific (for individuals). The specific permits are divided into minor permits and major permits (those which are subject to oversight by EPA). CAFO operators require a Animal Waste Discharge Permit, which is one of five categories of WPDES permits issued to point source dischargers (What Are WPDES Permits? WDNR, 1997).

Other

Unidentified.

7.0 Permit Coverage

WPDES permits cover CAFOs that have 1,000 AUs or more. DNR may determine that farms with less than 1,000 AUs must obtain a WPDES permit if that farm has discharged into state waters, but failed to respond to a “notice of discharge” (Types of WPDES Wastewater Permits, WDNR, 1997).

8.0 Permit Conditions

Approvals

A site appraisal is necessary if a permit is required. Wisconsin requires construction approval for animal feeding operations and permits for operating those facilities.

Design of storage structures must follow NRCS technical guidelines. A storage structure must have a 1-foot freeboard. Liner material may be made of clay, concrete, steel, or geomembrane. Allowable seepage is no more than 10^{-7} cm/sec (after Federal requirements), or rates that meet construction standards (NASDA, 1997). Waste structures must have a storage capacity of up to 180 days. Facilities regulated under the Animal Waste Management Program that hold WPDES permits must have structures to control 25-year storm event. Smaller facilities (<1,000 AUs) must design for the 10-year 24-hour storm event (Section H. Wisconsin, source unknown).

Discharge Rules

Patterned after the federal effluent limits that require no discharge. Waste lagoons must contain a 25-year, 24-hour storm event. Small facilities (<1,000) animal units are only required to design waste control structures to contain runoff from a 10-year, 24-hour storm.

Waste Management Plans

Unidentified.

Separation Distances

There are no state standards for separation distance from dwellings or property lines in Wisconsin, but separation distance can be controlled at the county level through zoning. Distance from water

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wells is variable based on type of storage structure. Distance from the bottom of a waste structure to groundwater must be at least 3 feet (NASDA, 1997).

Land Application Requirements

Nitrogen must be applied at agronomic rates. This is a requirement for permitted farms and cost-share recipients (NASDA, 1997). Some facilities must keep a record of disposal or land application of wastes. No commercial fertilizer is to be applied on frozen or snow-covered ground on slopes of greater than 9%, unless the ground is contoured with sod or contour farmed with corn residue remaining, in which case allowable slope is 12% maximum. Nitrogen inhibitor may be required for fall manure applications on sandy or loamy soils that are warmer than 50 F. Wastes must be incorporated if application is close to water. Wastes must be incorporated within 72 hours if application occurs 200 feet uphill from a sinkhole or conduit to groundwater. More application requirements are explained in Nutrient Management Standard 590 Criteria Summary.

9.0 Number of CAFO Facilities Permitted

There were 43 facilities permitted under WPDES through the Bureau of Watershed Management in 1993 (USEPA/State Feedlot Workgroup, 1993). Currently, 53 NPDES permits exist for animal feeding facilities and 19 new NPDES permits are expected to be issued by October 1, 1998 (USEPA, 1998).

10.0 Enforcement

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The Wisconsin Department of Natural Resources (DNR) has the authority under Chapter 147.21 of the Wisconsin Pollution Discharge Elimination Law to initiate civil action against violators of WPDES requirements. First, a complaint is issued (by anyone but permitting authorities). Then, an inspection may be conducted by a field officer, a local USDA staff member, or a representative of the county sanitarium. Warnings are issued for potential significant discharges, or a notice of discharge (NOD) is issued for discharges that can actually be documented. Operators are allowed a period of time to make corrections after which WDNR issues a short-term WPDES permit with a strict compliance timetable.

If a farmer makes progress toward a solution, the farmer may be eligible for extensions to complete the work. If a farmer is uncooperative enforcement activities start with several scheduled enforcement conferences. Failure to comply after this stage will result in a WPDES permit being issued that will allow DNR to inspect the site for other problems. At this point, DNR's Bureau of Wastewater Management follows a stepped enforcement procedure; Notice of Violation (NOV), Notice of Non-compliance (NON), enforcement conferences with DNR District enforcement specialists, and finally referral to the Wisconsin Department of Justice (DOJ) where fines may be levied (USEPA/State Feedlot Workgroup, 1993).

There are approximately 3 enforcement actions against permitted facilities per year, and since 1987 there has been 510 enforcement actions against unpermitted facilities (USEPA, 1998).

11.0 Inspection Programs

Routine on-site inspections are not required, though facilities with 1,000 AUs or more are subject to periodic inspections. CAFOs that are not permitted may be identified through informal

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monitoring networks. Inspections are complaint-driven for operations with fewer than 1,000 AUs, which form the majority of regulatory cases in Wisconsin. In these cases, the Department of Agriculture, Trade and Consumer Protection (DATCP) and counties assist DNR in investigating complaints and determining water quality impacts.

The process for facility inspections usually follows the same pattern beginning with an individual talking with a local conservation district (LCD) staff or county conservationist. The county staff are invited to the facility and the farmer is notified about the visit. DATCP is invited if the county does not visit. Next, it is determined whether a discharge is significant or not with the focus being on water quality impact rather than nutrient management. If necessary, informal enforcement activities begin (Section H. Wisconsin, source unknown).

12.0 Support

Wisconsin has 5 full time equivalent (FTE) workers staffing their animal waste control programs. (In 1993, 1.5 FTE in central office and 1 in each of 3 district offices and 1 spread among the other three district offices.) Wisconsin expects to add 10 more staff members and 2 more positions. DATCP and counties offer support for investigation of complaints.

The annual budget for the livestock permitting program is about \$303,721 (USEPA/State Feedlot Workgroup, 1993).

13.0 Case Study/Innovative Programs

Unidentified.

14.0 References

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Bryson, Tina (ed.) 1994. Animal Waste Management: Permits for Large Facilities. Wisconsin DNR Bureau of Wastewater Management. DD-PUBL-WW-020-94.

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Compiled by G. Beatty, EPA, Office of Water, Washington, D.C.

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WPDES Rules and Regulations. (1997). [Online]. Wisconsin DNR, Bureau of Watershed Management. Available: <http://www.dnr.state.wi.us/eq/wq/ww/StatAuth.htm> [1997, November].

1.0 Lead Regulatory Agency

The Wyoming Department of Environmental Quality (WDEQ) regulates wastes from animal feedlots through NPDES, Water and Wastewater, and Solid Waste programs.

2.0 Lead Agency for Voluntary Programs

The Natural Resource Conservation Service, Wyoming Department of Agriculture and the Wyoming Association of Conservation Districts share a lead role in offering voluntary programs.

3.0 Other State Agency Involvement

The Natural Resource Conservation Service, Wyoming Department of Agriculture and the Wyoming Association of Conservation Districts provide voluntary educational and technical assistance. The WDEQ, Office of Outreach provides educational and regulatory compliance assistance.

4.0 State Regulations Regarding CAFO

WDEQ, Water Quality Division, Water Quality Rules and Regulations Chapter 1, Quality Standards for Wyoming Surface Waters, October 15, 1998.

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WDEQ, Water Quality Division, Water Quality Rules and Regulations Chapter 2, Discharges/Permit Regulations for Wyoming, 1974.

WDEQ, Water Quality Division, Water Quality Rules and Regulations Chapter 3, Regulations for Permit to Construct, Install or Modify Public Water Supplies, Wastewater Facilities, Disposal Systems, Biosolids Management Facilities, Treated Wastewater Reuse Systems and Other Facilities Capable of Causing or Contributing to Pollution, November 21, 1997.

WDEQ, Water Quality Division, Water Quality Rules and Regulations Chapter 11, Design and Construction Standards for Sewerage Systems, Treatment Works, Disposal Systems or Other Facilities Capable of Causing or Contributing to Pollution and Mobile Home Park and Campground Sewerage and Public Water Supply Distribution Systems, May 11, 1998.

WDEQ, Water Quality Division, Water Quality Rules and Regulations Chapter 20, Permitting, Design and Operation Standards for Confined Swine Feeding Operations, This Rule is presently in the final steps of the adoption process which must be completed by June 9, 1999.

WDEQ, Solid and Hazardous Waste Division, Solid Waste Rules and Regulations, Chapter 1, General Provisions, October 15, 1998.

State Voluntary Programs

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The CAFO Information and Education Program is one of the statewide grant programs designed to give CAFO operators the information they need to avoid pollution and improve water quality for the state. Wyoming farmers may also receive aid from the Western Integrated Ranch/Farm Education (W.I.R.E.) which educates farmers on the management of physical, biological, financial, and human resources of agriculture.

Wyoming recently entered into a Memorandum of Understanding (MOU) with NRCS whereby NRCS can assist small AFOs with design and construction of whole-farm waste management systems and Wyoming will accept their work and oversight in lieu of requiring a construction permit for wastewater treatment systems, if such systems are necessary (U.S. EPA. 1998).

Wyoming is also working to help small AFOs find financial assistance to develop and implement BMPs. A significant percentage of 319 funds are used for this purpose (U.S. EPA, 1998).

6.0 Types of Permits

NPDES

Individual NPDES permits are required for CAFOs with more than 1,000 AU's. The state does not have a general NPDES permit for CAFOs.

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A Chapter 3 permit is required where the operator can not demonstrate, through Best Management Practices, that the runoff from a 25 year 24 hour storm event will not result in a discharge to surface waters.

Confined Swine Feeding Operation permits are required for Swine Feeding operations in excess of 1,000 AU's.

Other

Wyoming issues construction permits for wastewater treatment ponds constructed on AFOs (U.S. EPA, 1998). Permits to construct are used to protect ground water (NASDA, 1997).

Wyoming permits Confined Swine Feeding Operations separately (U.S. EPA, 1998).

7.0 Permit Coverage

Individual NPDES permits are mostly issued to operations with >1,000 AUs. Smaller operations are permitted based upon complaints and inspection of conditions that pose threats to waters of the state and can not be resolved through voluntary measures.

8.0 Permit Conditions

Approvals

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A management plan is required as part of the NPDES permit application including a demonstration of no discharge except in excess of a 25 year 24 hour storm event.

Wastewater ponds and conveyance systems are approved by means of a construction permit from WDEQ or an agricultural waste management plan developed by NRCS.

Lagoon Design and Specifications

The specifications of lagoon design are outlined in Wyoming's Water Quality Rules and Regulations Chapters 3 and 20.

Discharge Rules

No discharge is allowed into surface waters of the state (including wetlands) except in the case of a chronic or catastrophic storm in excess of the 25 year 24 hour storm event for all CAFOs except Confined Swine Feeding Operations which must contain up to a 100 year 24 hour chronic or catastrophic storm event.

Waste Management Plans

Comprehensive construction, operation and animal waste management plans are required for confined swine feeding operations. Construction permits for CAFO wastewater facilities require a demonstration that the surface and groundwater will not be adversely affected. A waste management plan demonstrating wastes will be land applied at agronomic rates is required.

Separation Distances

There is a 1-mile separation distance for confined swine feeding operations from occupied dwellings and schools, but no separation distance from property lines. There is a 1/4-mile separation requirement from water wells and perennial streams.

Land Application Requirements

Land application must be according to a comprehensive waste management plan and for agronomic rates. Monitoring and reporting is required.

9.0 Number of CAFO Facilities Permitted

Twenty-six individual NPDES permits have been issued

Eleven permits to construct have been issued.

Eleven Confined Swine Feeding Operation permits have been issued.

10.0 Enforcement

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Enforcement is conducted in accordance with the NPDES CAFO Enforcement and Compliance Strategy. Violations are identified through complaints, self monitoring reports and inspections.

11.0 Inspection Programs

All NPDES permitted facilities are inspected at least once every five years and in response to complaints. Confined Swine Feeding Operations are inspected annually. Periodic self monitoring reports are reviewed for compliance.

12.0 Support

Unidentified.

13.0 Case Study/Innovative Programs

Unidentified.

14.0 References

National Association of State Departments of Agriculture (NASDA). 1997. Summary Matrix of State Survey on Waste and Manure Management Regulations.

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U.S. Environmental Protection Agency. 1998. Efforts to Improve Controls on Animal Feeding Operations (CAFOs). Results of June 1998 Survey of States and Regions Compiled by G. Beatty, U. S. EPA, Office of Water, Washington, D.C.

Wyoming Department of Agriculture Natural Resources Division. (1997, May 1). Mission Statement. [Online]. Wyoming Department of Agriculture. Available:
<http://wyagri.state.wy.us/natres/NATRES.htm> [1997, November 13]

Wyoming Department of Environmental Quality, Water Quality Division. April 1999.

CHAPTER 4. STATE PROFILES

This chapter presents individual profiles of state programmatic and regulatory efforts addressing AFOs for each of the 50 states. These profiles provide a state-by-state summary of the key elements within state AFO regulatory programs. The profiles identify and summarize existing state activities used to address environmental and health impacts from AFOs. The profiles provide a comprehensive overview of each state program and include the following information for each state:

- A description of the lead regulatory agency(ies) (i.e., permitting authority) and agency(ies) responsible for directing voluntary programs
- State regulations that address AFOs and voluntary programs that encourage regulatory compliance or the use of best management practices
- The types of permits issued and the permitting processes for each state, the circumstances for which permits are required (i.e., permit coverage), and the requirements and responsibilities of AFO owners and operators (i.e., permit conditions)
- State enforcement activities, inspection programs, and staffing and funding levels dedicated to addressing AFOs
- Examples of innovative or interesting state-level projects or programs developed to control the potential negative environmental impacts of AFOs.

If information on a particular program element was not readily available, or not identified, the relevant section is described as “unidentified”. Figure 3.1 presents the outline used for each of the state profiles.

- | | |
|------|---|
| 1.0 | Lead Regulatory Agency Responsible for Permitting and Enforcement |
| 2.0 | Lead Agency for Voluntary Programs (i.e., agency that directs cost share or BMP development) |
| 3.0 | Other State Agency Involvement |
| 4.0 | State Regulations Regarding AFO |
| 5.0 | State Voluntary Programs
<i>Cost share (type and level of funding)</i>
<i>Educational training or technical assistance</i> |
| 6.0 | Type of Permits
<i>NPDES</i>
<i>Other (general use or general agriculture permits, construction permits, and operating permits)</i> |
| 7.0 | Permit Coverage (potential nuisance and/or location) |
| 8.0 | Permit Conditions
<i>Approvals (permits, letters of intent, or certificates of coverage)</i>
<i>Lagoon design and specifications (seepage limits, etc.)</i>
<i>Discharge rules</i>
<i>Waste management plans</i>
<i>Separation distances</i>
<i>Land application requirements</i>
<i>Other interesting permit conditions</i> |
| 9.0 | Number of AFO/CAFO Facilities in the State and Number Permitted |
| 10.0 | Enforcement (authority to levy fines and civil or criminal penalties) |
| 11.0 | Inspection Programs |
| 12.0 | Support (staffing and funding) |
| 13.0 | Case Studies/Innovative Programs |
| 14.0 | References |

Figure 3.1 Outline Used for Profiles of State Programs and Regulatory Activities Related to Animal Feeding Operations.

Methods

Information for the “State Compendium: Activities Related to Animal Feeding Operations” (State AFO Compendium) was gathered in part by compiling existing research and survey results. Copies of state NPDES and manure management regulations, general and individual permits, and other programmatic information (e.g., informational brochures) were drawn from EPA files. In addition, the EPA Regional offices provided summaries of the state AFO programs within their respective regions.

The World Wide Web (WWW) was used to locate state government home pages and state agency/division home pages (environmental and agriculture). The Internet search focused on reviewing the information available from state departments of agriculture and state departments of natural/water resources. When available, state regulations and programmatic information addressing AFOs were downloaded from the WWW. Internet sites of National Association of State Departments of Agriculture (NASDA) and EPA Agricultural Compliance Assistance Centers were also searched for relevant information and links. The Bureau of National Affairs Environmental Database was used to identify and collect state regulations most relevant to AFOs. Using the different data sources above, a profile detailing each state’s AFO program was developed. The individual profiles were subsequently used to develop a national summary of AFO activities.

Data Overview

Because EPA has identified certain classes of AFOs as point sources under the NPDES program, most of the state programmatic and regulatory information gathered and presented in this document is directed at controlling water quality impacts from AFOs. Although some states have designed regulatory standards to control non-water quality impacts (e.g., set back requirements for odor control), the vast majority of information summarized in the profiles is based on state efforts to manage AFOs from the perspective of a wastewater management.

Given the constraints of the data collection efforts, and because many states have not addressed certain program elements, program information for every state is not complete. For example, it was difficult to find state program information about voluntary programs, the number of AFO/CAFO facilities and number of permits issued, enforcement efforts, and program support. Several states apparently do not have readily available information on state AFO-related programs or legislation (e.g., Alaska, Hawaii, Nevada, New Mexico, Rhode Island, and West Virginia). Despite some data gaps, the compendium is a comprehensive description of state program efforts, providing a solid overview of numerous aspects of most state programs. Sources are cited within the individual state profiles.